

## PUBLICATIONS AUTHORIZATION AND INVOICE

INVOICE NO.

64737

## PUBLICATIONS AUTHORIZATION (To be completed by agency):

TO: (NAME AND ADDRESS OF NEWSPAPER)

FEDERAL I.D. NO./SOC. SEC. NO.

FROM: (NAME AND ADDRESS OF AGENCY) AGENCY TELEPHONE NO.

Philadelphia Inquirer  
440 N. Broad St.  
PO Box 8768  
Philadelphia, PA 19101

23-1717558

Ad #83MC02300

Shirley Barky  
DEP - Air Quality  
400 Market St. 12th Fl.  
PO Box 8768, Harrisburg, PA  
717-787-9492

HEREWITH IS ENCLOSED COPY FOR PUBLICATION OF ADVERTISEMENT FOR PROPOSALS TO

☐ EMPLOY☐ PURCHASE☐ CONTRACT☐ SELL

TYPE OF AD

☐ CLASSIFIED☒ LEGAL NOTICE

PUBLISH ADVERTISEMENT (NO. OF TIMES)

MAXIMUM NO. OF LINES

DATE

ORDER NO.

DATES OF INSERTION

SIGNATURE FOR AGENCY

3

2 column display ad

August 12, 13 and 14, 1999

Phyllis Lindsay

You, as vendor, are authorized to publish this advertisement in your newspaper, subject to the terms of this order, as follows: Advertisement to be published in regular advertising columns, no position specified; caption of two lines and signature to be in capitals and subject matter and title of officer to be set solid in type regularly used by your newspaper for public (legal) notice advertising; charge to be made at the rate charged to and paid by commercial advertisers for matter similarly set and occupying similar space; advertisement to be run in the editions specified above. Vendor agrees that, in the performance of any contract awarded to it hereunder, said vendor will not discriminate against any employee or other persons on account of race, color, sex, religious creed, ancestry, age or national origin and that the Commonwealth, upon receipt of satisfactory evidence of such discrimination, shall have the right to cancel said contract. Return this copy at once if you will not accept this advertisement under the terms set forth.

Proof of advertising in the form of a tearsheet must be included on Parts 1, 2 & 3. Return original and two copies (signed by the editor or publisher) to Agency listed above. Part 1 must be notarized. Part 4 is yours.

Commonwealth to be billed only for actual number of printed lines published.

ACCOUNT CODE	FUND	DEPT	APP	YEAR	LDG	ORG	COST FUNCTION	OBJ	AMOUNT
	001	035	790	99	1	2710	06409	325	\$ 5,273.52

## INVOICE (To be completed by publisher):

	DATE OF INSERTION	ACTUAL NO. OF PRINTED LINES	COST PER LINE	TOTAL AMOUNT
1st Ad	8-12-99	2 col x 73 lns 146 lines	\$12.04	\$ 1757.84
2nd Ad	8-13-99	2 col x 73 lines 146 lines	\$12.04	1757.84
3rd Ad	8-14-99	2 col x 73 line 146 lines	\$12.04	1757.84
Grand Total ->				\$ 5273.52

acct #076046202 (Tel. #717-787-4325ZZR)

GRAND TOTAL -&gt;

\$ 5273.52

Commonwealth of Pennsylvania  
County of Philadelphia

Before me, the subscriber, a Notary Public in and for said County, personally came Jean E. D'Arciprete who being duly sworn, doth depose and say that he is\* Legal Sales Rep the Philadelphia Inquirer a general newspaper published at 400 N. Broad St. that the advertisement, of which tearsheet is attached hereto, was published in the regular advertising columns of said newspaper, in the editions of said newspaper, in all respects as ordered and invoiced above; and that the Commonwealth is not charged therefor at a rate higher than is charged any ordinary commercial advertiser for a similar amount of matter occupying similar space and set in a similar manner, in said newspaper.

Sworn and subscribed before me this 16th  
day of August 19 99

Margaret E. Buchalski  
NOTARY PUBLIC

My commission expires

May 27, 2002

Jean E. D'Arciprete  
SIGNATURE OF AFFIANT

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Philadelphia Inquirer  
440 N. Broad St.  
PO Box 8527  
Philadelphia, PA 19101

23-1717-558

Ad #83MC02300

Shiela Barky  
DEP-Air Quality  
400 Market St. 12th Fl.  
PO Box 8768, Harrisburg, PA  
717-787-9442

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Sworn and subscribed before me this 16th day of August 1999

Margaret E. Buchalski  
NOTARY PUBLIC  
My commission expires May 27, 2002

Jean E. D'Arciprete  
SIGNATURE OF AFFIANT

**PROPOSED REVISION TO THE STATE  
IMPLEMENTATION PLAN FOR OZONE FOR THE  
PHILADELPHIA OZONE NONATTAINMENT AREA**

**Public Hearing**

Ground-level ozone concentrations above the federal health-based standard are a serious human health threat and can also cause damage to crops, forests and wildlife. The Department of Environmental Protection is seeking public comment on a state implementation plan (SIP) revision for the Philadelphia ozone nonattainment area (Bucks, Chester, Delaware, Montgomery and Philadelphia counties) which reduces volatile organic compounds (or equivalent) by three percent per year from 1998 through 2005 and demonstrates that the area will meet the health-based ozone standard.

The proposed SIP revises the highway vehicle emission inventory submitted to EPA and establishes new motor vehicle emission budgets for purposes of transportation conformity. The U.S. Environmental Protection Agency has required areas classified as serious and above for ozone to include in their SIPs all control measures which will be in place by the attainment year and which are assumed in the air quality attainment demonstration (last submitted to EPA on August 21, 1998). This proposed SIP thus includes emission reductions attributable to the National Low Emission Vehicle program already in place and additional federal heavy-duty engine standards effective 2004. These strategies were not included in the motor vehicle emissions inventory originally submitted to EPA on April 30, 1998.

This proposal is available on the DEP Website at <http://www.dep.state.pa.us> (choose Information by Subject/Air Quality/State Implementation Plans), or through the contact person(s) listed below.

The Department will hold a public hearing to receive comments on the SIP revision on **Friday, September 17, 1999 at 1:00 p.m.** at the offices of the Delaware Valley Regional Planning Commission, The Bourse Building, 8th Floor, (use 4th Street side elevators), 111 S. Independence Mall East, Philadelphia.

Persons wishing to present testimony at the hearing should contact Shlela Barley, 717-787-9495 (P.O. Box 8468, Harrisburg, PA 17105) to reserve a time. If you do not reserve a time, you will be able to testify after pre-registrants. Witnesses should keep testimony to 10 minutes and should provide two written copies at the hearing. Persons with a disability who wish to attend the hearing and require an auxiliary aid, service or other accommodation to participate in the proceeding should contact Wick Havens at the telephone above. TDD users may contact the AT&T Relay Service at 800-654-5984 to discuss how the Department can best accommodate their needs.

Written comments should be sent to Arleen Shulman, Chief, Mobile Sources Section Chief, Bureau of Air Quality, P.O. Box 8468, Harrisburg, PA 17105-8468 no later than close of business on September 20, 1999.

**Commonwealth of Pennsylvania  
Department of Environmental Protection**



**State Implementation Plan (SIP) Revision  
For the Philadelphia Ozone Nonattainment Area**

**January 2000**

Division of Air Resource Management  
Bureau of Air Quality  
Pennsylvania Department of Environmental Protection  
PO Box 8468  
Harrisburg, PA 17105-8468  
717-787-9495  
J. Wick Havens, Chief

**[www.dep.state.pa.us](http://www.dep.state.pa.us)**



**Proposed  
State Implementation Plan (SIP) Revision  
For the Philadelphia Ozone Nonattainment Area**

**August 1999**

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## **What Is Ozone?**

Ozone levels above the health-based standard (national ambient air quality standards) are a serious human health threat, and also can cause damage to important food crops, forests, and wildlife. Ozone in the troposphere, also called ground-level ozone, should not be confused with stratospheric ozone – located in the upper atmosphere – which protects the earth by blocking out damaging solar radiation.

Ozone is not emitted directly to the atmosphere, but is formed by photochemical reactions between volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) in the presence of sunlight. The long, hot, humid days of summer are particularly conducive to ozone formation, so ozone levels are of general concern during the months of May through September.

The primary sources of man-made VOCs and NO<sub>x</sub>, the ozone precursors, are the evaporation of fuels and solvents (gasoline and consumer products), combustion of fuels (motor vehicles, power plants, and other industries), and chemical and industrial processes. The Philadelphia Metropolitan area still exceeds the one-hour health-based standard for ozone during the summer.

## **Why This State Implementation Plan (SIP) Revision?**

Pennsylvania is responsible for developing state implementation plans (SIPs) for air quality for the five Pennsylvania counties of the Philadelphia interstate ozone nonattainment area -- Bucks, Chester, Delaware, Montgomery and Philadelphia counties. Pennsylvania submitted its required post-1996 rate-of-progress and attainment plans in several documents during 1998.

The Clean Air Act Amendments (Section 176c) provides a mechanism by which federal funded or approved highway and transit plans, programs and projects are determined not to produce new air quality violations, worsen existing violations or delay timely attainment of national air quality standards. EPA regulations issued to implement transportation conformity provides that motor vehicle emission “budgets” establish caps of these emissions which cannot be exceeded by the predicted transportation system emissions in the future. Transportation agencies in Pennsylvania are responsible for making timely transportation conformity determinations. The Delaware Valley Regional Planning Commission holds that responsibility for the Philadelphia area.

During 1999, EPA began and will soon conclude negotiations as a result of litigation by the Natural Resources Defense Council. As a result, EPA has drafted and will soon finalize new guidance for adequate highway vehicle emission budgets. This policy requires, among other things, that the budgets must include the effects of all motor vehicle controls that will be in place by the attainment year, including federal measures. These control measures must be specifically identified and their emission reductions must be quantified.

Pennsylvania's previous SIP submissions did not include the effects of two federal motor vehicle control measures: more stringent standards for heavy-duty engines and the National Low Emission Vehicle Program. This SIP revision identifies and quantifies the additional emission reductions expected from those measures and revises the transportation conformity budgets accordingly.

## Revised Highway Vehicle Emission Estimates

Summary tables of emissions from all sectors are provided for the reader's convenience. However, only the highway vehicle emissions have changed from previous SIPs and are subject to public comment. Tables 1a and 1b project what emissions would be for each milestone year to 2005 if no post-1990 emission controls were in effect. These inventories are called "uncontrolled" inventories.

**Table 1a: VOC Emissions Before Controls**  
(identical to previous SIP)

	1999	2002	2005
Point	162	166	169
Area	203	205	207
Nonroad	83	83	84
Highway Vehicle	177	180	187
<b>TOTAL</b>	<b>625</b>	<b>634</b>	<b>647</b>

**Table 1b: NOx Emissions Before Controls**  
(identical to previous SIP)

	1999	2002	2005
Point	177	182	187
Area	47	47	47
Nonroad	74	75	75
Highway Vehicle	156	157	160
<b>TOTAL</b>	<b>454</b>	<b>461</b>	<b>469</b>

Pennsylvania will reduce emissions from the strategies listed in Tables 2a and 2b with the VOC and NOx reductions expected. Only emission projections from highway vehicle control strategies have changed from previous SIP submissions. Other strategies are provided for the reader's convenience.

**Table 2a: VOC Reduction Measures By Year (1999-2005)**

	<b>1999</b>	<b>2002</b>	<b>2005</b>
<i>Fed. Motor Vehicle Control Program</i>	6.95	13.12	20.35
<i>Enhanced Vehicle Inspection/Maintenance</i>	58.69	61.44	65.38
<i>Fed. Reformulated Gasoline</i>	22.56	35.24	36.59
Reasonably Available Control Technology	9.82	10.11	10.42
Rule Effectiveness for Point Sources	15.93	16.17	16.45
Shutdowns	2.38	2.59	2.79
Fed. Architectural/Industrial Maintenance Coatings	7.33	7.38	7.43
Fed. Autobody Refinishing	6.01	6.07	6.12
Fed. Consumer Products	6.64	6.71	6.77
Stage II Vapor Recovery/Onboard	17.71	19.82	21.25
Fed. Waste Treatment Storage Disposal	9.52	9.61	9.70
Fed. Spark Ignition (Small Nonroad) Engines	0.00	0.00	15.79
<i>National Low Emission Vehicles</i>	0.00	1.01	2.85
<b>TOTAL (rounded to nearest ton)</b>	<b>164</b>	<b>189</b>	<b>222</b>

**Table 2b: NOx Reduction Measures By Year (1999-2005)**

	<b>1999</b>	<b>2002</b>	<b>2005</b>
<i>Fed. Motor Vehicle Control Program</i>	14.11	22.59	27.36
<i>Enhanced Vehicle Inspection/Maintenance</i>	32.22	32.73	33.89
<i>Fed. Reformulated Gasoline</i>	0.47	7.17	7.45
Reasonably Available Control Technology	5.63	5.74	5.82
NOx Allowance Requirements	27.37	30.82	34.20
Shutdowns	1.47	1.21	0.94
Fed. Compressed Ignition (Diesel Nonroad) Engines	0.00	0.00	44.00
<i>National Low Emission Vehicles</i>	0.00	1.69	4.71
<i>Heavy-Duty Diesel Engine Standard</i>	0.00	0.00	0.38
<b>TOTAL (rounded to nearest ton)</b>	<b>81</b>	<b>102</b>	<b>159</b>

Note that several national programs have been adopted by EPA but their implementation dates are in the future. For example, the heavy-duty diesel engine standard does not take effect until the 2004 model year, so its effect in 2005 will be very small. Similarly, the National Low Emission Vehicle program's reductions depend on older vehicles being replaced by newer cleaner vehicles; only about one-tenth of the fleet is replaced each year.

Emissions of VOC and NOx after these controls are applied are summarized in Tables 3a and 3b. A graphic comparison of emissions by sector before and after controls follows the tables.

***Table 3a: VOC Emissions After Controls***

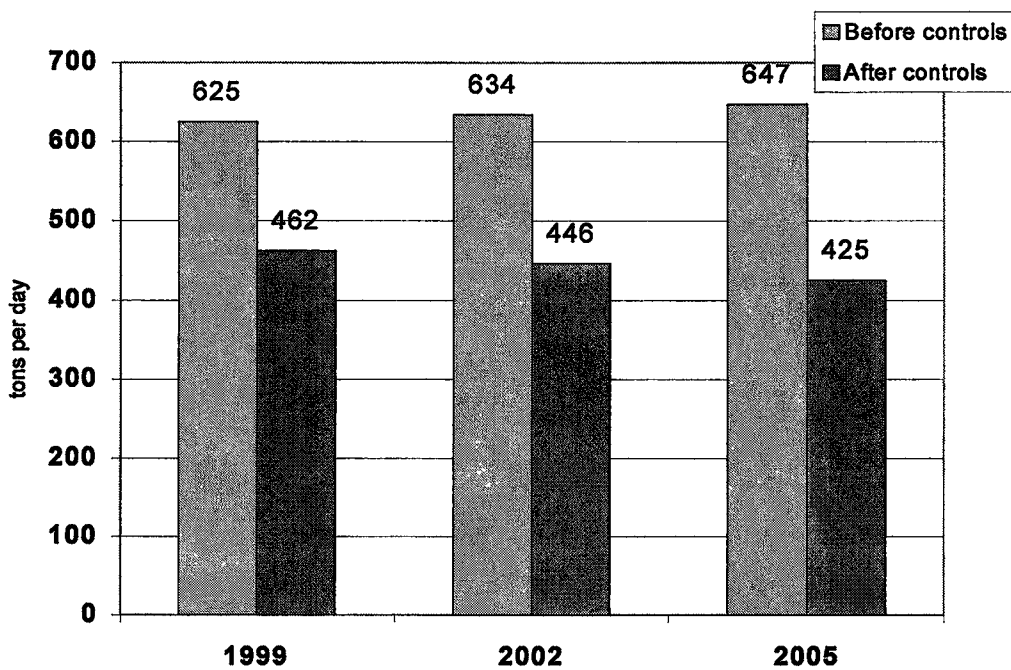
	<b>1999</b>	<b>2002</b>	<b>2005</b>
Point	134	137	139
Area	156	156	156
Nonroad	83	83	68
<i>Highway Vehicle</i>	89	70	62
<b>Totals (rounded to nearest ton)</b>	<b>462</b>	<b>446</b>	<b>425</b>

***Table 3b: NOx Emissions After Controls***

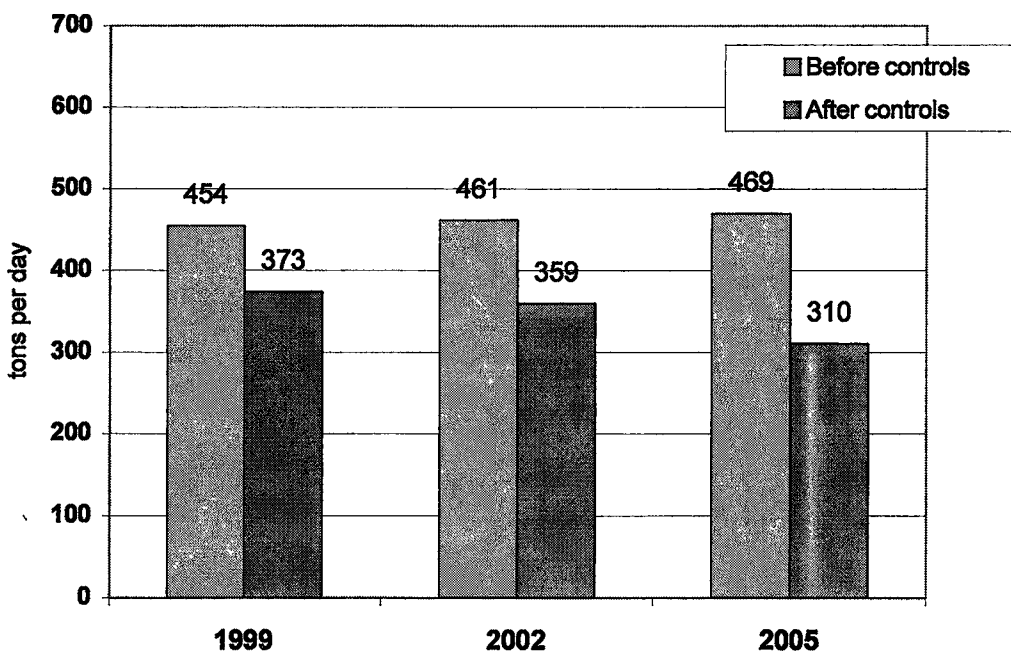
	<b>1999</b>	<b>2002</b>	<b>2005</b>
Point	143	144	146
Area	47	47	47
Nonroad	74	75	31
<i>Highway Vehicle</i>	109	93	86
<b>Totals (rounded to nearest ton)</b>	<b>373</b>	<b>359</b>	<b>310</b>

In its previous submissions, Pennsylvania estimated that it would achieve more than enough reductions in VOC-equivalent emissions to meet Clean Air Act rate of progress requirements in all milestone years. With the additional credit from the federal heavy-duty engine standards and National Low Emission Vehicle program, Pennsylvania will increase its margin of safety.

**Chart 1a: VOC emissions by year**



**Chart 2a: NOx emissions by year**



## Motor Vehicle Emission Budgets for Transportation Conformity

The emission budgets established by this document are identical to the highway vehicle inventories described above. Vehicle miles travelled and average speeds for the five-county area remain unchanged from previous submissions. Emissions are reduced because of the additional control strategies quantified.

**Table 4: Motor Vehicle Emission Budgets**

<b>POLLUTANT</b>	<b>1999</b>	<b>2002</b>	<b>2005</b>
<b>VOC</b>			
Kilograms/summer day	80,435	63,038	56,027
Tons/summer day	88.66	69.52	61.76
<b>NOx</b>			
Kilograms/summer day	99,431	84,487	78,400
Tons/summer day	109.60	93.13	86.42

The following information is available in Appendix C to document establishment of the highway vehicle emissions inventories and the transportation conformity budgets:

- Summary VMT, VOC and NOx inventories and forecasts by county
- Modeling parameters
- Control strategy emissions component breakdown
- VMT, VOC, CO and NOx inventory and forecast emissions by county by functional class
- VMT, VOC, CO and NOx inventory and forecast emissions by county by vehicle type
- MOBILE input files for milestone year control strategy scenarios

# **APPENDICES**

- **Appendix A: Description of Additional Control Measures**
- **Appendix B: Highway Emissions Methodology**
- **Appendix C: Summary Tables and Documentation for Highway Vehicle Inventories**



## ***APPENDIX B: HIGHWAY VEHICLE EMISSION METHODOLOGY***

Other than those discussed below, planning assumptions and modeling tools remain consistent with the previous Phase I and Phase II SIP submittals for the Philadelphia 5-county area. Changes are described in the section below. A description of Pennsylvania's highway vehicle emission inventory preparation methodology is also included, with updated references.

### ***Changes to Modeling Methodology and Input Parameters***

Two additional control strategies have been added to the planning assumptions for the Philadelphia area: the new 2004 NO<sub>x</sub> standard for heavy-duty diesel engines (HDE) and the national low emission vehicle (NLEV) standard for light-duty gasoline-fueled vehicles. The impacts of the new control strategies are provided in the Control Strategy Breakout Tables. In addition, the methodology to calculate the NO<sub>x</sub> benefit of reformulated gasoline (RFG) has been revised slightly based on US EPA guidance released in September 1998. Other planning assumptions and methodologies remain consistent with previous SIP submittals for the Philadelphia 5-county ozone non-attainment area. The complete input parameters are provided in Tables 1a-e of the MOBILE Input Parameters Section.

**Heavy-Duty Engines.** A new HDE NO<sub>x</sub> standard was promulgated in October 1997 that combined emission standards of NO<sub>x</sub> and non-methane hydrocarbons (NMHC) from model year 2004 and later heavy-duty diesel engines used in trucks and buses. Manufacturers of such engines have the choice of certifying their new engines to either a 2.4 g/bhp-hr NMHC plus NO<sub>x</sub> standard, or to a 2.5 g/bhp-hr NMHC plus NO<sub>x</sub> standard with a limit of 0.5 g/bhp-hr on NMHC.

In the release of the modeling guidance for the 2004 HDE NO<sub>x</sub> standard, EPA also updated basic emission rates for model years 1990 and newer HDE. These rates provide a more accurate assessment of HDDV emissions and are included in the MOBILE5b version of the model. However, using version MOBILE5a\_H, the emission rates for HDE model years 1990 to 2003 must be added to the base year emission factors using the guidance outlined by EPA. For the control strategy breakout, the new emission rates were incorporated into modeling.

**National Low Emission Vehicle Program.** The NLEV program is a voluntary program agreed upon by Pennsylvania, the northeastern states and the auto manufacturers. New cars and light duty trucks up to 6,000 pounds gross vehicle weight will meet tailpipe standards that are more stringent than EPA can mandate prior to model year 2004. Now that the program is agreed upon, these standards will be federally enforced. Pennsylvania submitted a separate SIP revision upon adoption NLEV program regulations (Pennsylvania Code Title 25, Chapter 126). New vehicles meeting the NLEV standard were available in Pennsylvania (and several other northeastern states) with the 1999 model year and will be available nationally with the 2001 model year. An accurate methodology to quantify NLEV reductions was not available when the Philadelphia SIP was originally submitted in April 1998.

**Phase II Reformulated Gasoline.** The MOBILE5aH model version does not provide NO<sub>x</sub> credit for Phase II RFG starting in the year 2000. To calculate the NO<sub>x</sub> benefit for RFG, MOBILE5b results are used to adjust the emissions results of the MOBILE5aH inventory. Based on EPA guidance, the difference in NO<sub>x</sub> emissions is divided by the MOBILE5b results without RFG to establish the fractional NO<sub>x</sub> RFG benefit. The fractional NO<sub>x</sub> benefit is multiplied by

the NO<sub>x</sub> emissions based on MOBILE5aH to determine the NO<sub>x</sub> emission benefit from RFG. The previous submission, made before EPA guidance was provided in September 1998, did not include the fractional NO<sub>x</sub> benefit.

A sample calculation is provided below:

---

**Example: RFG NO<sub>x</sub> Benefit Calculation**

*Bucks County 2005*

MOBILE5aH Emissions Results =	26.02 tpd
MOBILE5b run without RFG =	27.95 tpd
MOBILE5b run with RFG =	26.30 tpd
Difference (5b w/ RFG – w/o RFG) =	-1.65 tpd
Fractional NO <sub>x</sub> Benefit (1.65 / 27.95) =	.059
RFG NO <sub>x</sub> Benefit (MOBILE5aH x .059) =	-1.53 tpd

---

**PPAQ (Post-Processor for Air Quality).** The PPAQ software system has gone through several updates to refine the software and increase its capability and flexibility. The current version is PPAQ3.28. Changes that affect the calculated emissions include the following:

- The diurnal emission calculation procedure now properly allocates diurnal emissions to time periods. This results in small changes in overall diurnal emission quantities.

The other changes to the PPAQ software system do not result in speed or emission calculation changes and instead simply increased the capability and flexibility of the software system.

*Technical notes for this SIP revision*

**US EPA's MOBILE Model.** The modeling was performed using EPA's approved MOBILE model, version MOBILE5a\_H. The 5a\_H version is an enhanced version of MOBILE5a that provides additional emissions credits for hybrid I/M programs and technician training and certification (TTC). The TTC credits are applied to Philadelphia and Pittsburgh areas that have implemented enhanced I/M programs. Pennsylvania requires all inspectors to be certified to perform an emissions inspection.

**I/M Credit Data Files.** EPA periodically updates their I/M credit files as new cutpoints are established. The new files can be easily downloaded from the EPA OMS or TNN websites. EPA's latest I/M credit data file for Tech IV+ vehicles (1981+ model years) is the IMDATA4.D. This file contains cutpoints for both final and start-up, and one and two mode ASM I/M

programs. The single mode ASM5015 final cutpoints were used to represent Philadelphia's PA97 with ASM I/M program. The I/M credit file for Tech I and II vehicles (pre-1981 model years) is TECH12.D

**Philadelphia 5-County Area – PA97 with ASM I/M Program.** The PA97 with ASM program includes an ASM testing procedure (1981 MY and newer), idle test (1975 – 1980 MY), anti-tampering (1975 and newer MY), full pressure and purge (1981 and newer MY), and the gas cap pressure check (1975 to 1980 MY). All five counties (Bucks, Chester, Delaware, Montgomery and Philadelphia) are included in the program.

Modeling this area requires two scenarios, since the gas cap pressure check cannot be modeled directly with MOBILE. The first scenario is modeled with two I/M programs (one for the idle test for pre-81 model years and the second with ASM for model years 1981 and newer), anti-tampering (1975 and newer), EPA pressure and purge (1981 and newer). In the second scenario, the EPA pressure test is modeled to reflect 1975 and newer model years. This accounts for the gas cap pressure check for 1975 and 1980 vehicles. The resultant emissions are determined by crediting 40% of the pressure check credit using the following equation.

---

**Example: Calculating the Gas Cap Pressure Check**

$$\text{tpd w/ gas cap credit} = \text{tpd w/o gas cap} - [(\text{tpd w/o gas cap} - \text{tpd w/ gas cap}) \times 40\%]$$

$$14.41 \text{ tpd} = 14.65 - (14.65 - 14.05) \times 40\%$$

tpd = Tons per Day

---

**Vehicle Age Distributions.** Vehicle age distributions are input to MOBILE for each county based on registered vehicles that reflect July 1 summer conditions. These distributions reflect the percentage of vehicles in the fleet up to 25 years old and are listed by the eight EPA vehicle types. The updated vehicle age distributions have been acquired for this inventory submission from PennDOT Bureau of Motor Vehicles Registration Database. The modeling utilizes vehicle age distributions from July 1993.

**Temperatures.** The minimum, maximum and ambient temperatures were provided by the nearest weather station for each of the air quality districts for an average July summer day. These temperatures are the same as those that were used for the 1990 inventories.

**Pennsylvania's  
Highway Vehicle Emissions Inventories for  
Ozone NonAttainment Area SIPS:**

**An Explanation of Methodology**

**Prepared for:**

Mobile Sources Section, Bureau of Air Quality  
Pennsylvania Department of Environmental  
Protection  
PO Box 8468  
Harrisburg, PA 17105-8468

Air Quality Section  
Pennsylvania Department of  
Transportation  
6<sup>th</sup> floor Forum Place, 555 Walnut Street  
Harrisburg, PA 17101-1900

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# INTRODUCTION

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The purpose of this document is to explain how Pennsylvania estimates emissions from highway vehicles for inclusion in its emission inventories and State Implementation Plans.

## *Overview of Emissions Inventories*

Under the Clean Air Act Amendments of 1990, Pennsylvania is required to develop emission inventories for ozone precursors -- volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>). A baseline 1990 inventory was required statewide. Two ozone nonattainment areas in Pennsylvania have also been required to achieve US EPA specified minimum percentage reductions in VOC: the seven-county Pittsburgh area and the five-county Philadelphia area. For these areas, projected inventories, both with and without anticipated control strategies, have been prepared for several "milestone" years. Finally, states must develop periodic inventories to "refresh" the 1990 inventory, using updated data and/or estimation methods.

Pennsylvania's inventories generally categorize emissions into four categories:

- highway vehicles
- stationary sources (major industrial, commercial and utility sources)
- area sources (smaller industrial/commercial sources, consumer products)
- nonroad mobile sources (including construction and agricultural equipment, lawn and garden equipment)

Of all of the sources of air pollution, only the emissions of some stationary sources are measured directly and continuously through instrumentation. Emissions from all other sources must be estimated in some fashion, including those from highway vehicles. In their very simplest form, estimates of emissions follow the following pattern:

*Emission rate x activity level = emissions per time period (usually day or year)*

Most emission rates have been developed by EPA, in cooperation with industry and states, over many years and are compiled and documented in a reference volume, Compilation of Air Pollution Emission Factors (AP-42).

For example, the annual VOC emissions from residential fuel oil heating could be estimated by:

<i>AP-42 emission rate</i>	<i>x</i>	<i>activity level</i>	<i>=</i>	<i>emissions</i>
0.713 pounds/gallon	<i>x</i>	# dwelling units x % using oil x # gallons per unit		# pounds of VOC per year

Adding up the products of the emission rates and activity levels for all sources of a given pollutant constitutes the emission inventory for that pollutant.

## ***Highway Vehicle Emission Inventories***

Highway vehicles contribute significantly to air pollution, particularly to ground-level ozone, which is the most persistent air pollutant in Pennsylvania. Ozone is not created directly but formed in sunlight from VOCs and NO<sub>x</sub>. Both VOCs and NO<sub>x</sub> are emitted from highway vehicles. Pennsylvania's ozone-related emission inventory efforts have been focused on these pollutants.

Obviously, direct measurement of emission levels from all vehicles in use is impossible. In comparison to highway vehicles, estimating residential heating emissions is a fairly simple calculation because there is a constant emission rate and a fairly simple measure of activity. For highway vehicles, however, estimating the emission rate and activity levels of all vehicles on the road during a typical summer day is a complicated endeavor.

If every vehicle emitted the same amount of pollution all the time, one could simply multiply those emission standards (emission rate in grams of pollution per mile) times the number of miles driven (activity level) to estimate total emissions. But, the fact is that emission rates from all vehicles vary over the entire range of conditions under which they operate. These variables include air temperature, speed, traffic conditions, operating mode (started cold? started warm? running already warmed up?) and fuel. The inventory must also account for non-exhaust or evaporative emissions. In addition, the fleet is composed of several generations, types of vehicles and their emission control technologies, each of which performs differently. This requires that the composition of the fleet (vehicle ages and types) must also be included in the estimation algorithm.

In order to estimate both the rate at which emissions are being generated and to calculate vehicle miles traveled (activity level), Pennsylvania examines its road network and fleet to estimate vehicles activity. For ozone-related inventories, this is done for a typical summer (July) weekday. Not only must this be done for a baseline year, but it must also be projected into the future. This process involves a large quantity of data and is extremely complex.

Computer models have been developed to perform these calculations by simulating the travel of vehicles on the Commonwealth's roadway system. These models then generate emission rates (also called emission factors) for different vehicle types for area-specific conditions and then combine them in summary form. The "area-specific conditions" include vehicle and highway data, plus control measure characteristics and future year projections of all variables.

**MOBILE.** The heart of the highway vehicle emission calculation procedure is EPA's highway vehicle emission factor model, MOBILE. This is a FORTRAN program that calculates **average** in-use fleet emission factors for ozone precursors for each of eight categories of vehicles under various conditions affecting in-use emission levels (e.g., ambient temperatures, average traffic speeds, gasoline volatility) as specified by the model user. MOBILE produces the "emission rates" referred to in the previous section.

The model was first developed as MOBILE1 in the late 1970s, and has been periodically updated to reflect the collection and analysis of additional emission factor data over the years, as well as changes in vehicle, engine and emission control system technologies, changes in applicable regulations, emission standards and test procedures, and improved understanding of in-use

emission levels and the factors that influence them. Pennsylvania is currently using MOBILE5a\_H as approved by EPA.

**PPAQ.** Pennsylvania also uses the Post Processor for Air Quality (PPAQ), which consists of a set of programs that perform the following functions:

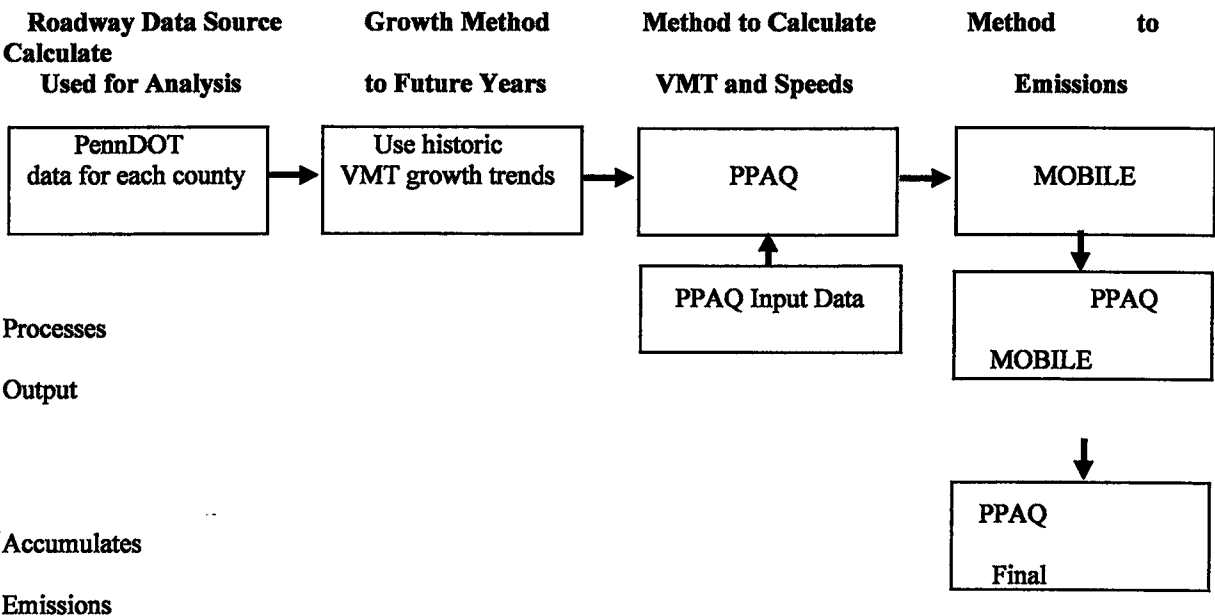
- Analyzes highway operating conditions
- Calculates highway speeds
- Compiles vehicle miles of travel (VMT) and vehicle type mix data
- Prepares MOBILE runs
- Calculates emission quantities from output MOBILE emission rates and accumulated highway VMT.

PPAQ has become a widely used and accepted tool for estimating speeds and processing MOBILE emission rates. It is currently being used for the New York City region, for the north and south New Jersey regions, and in other states including Louisiana, Virginia, and Indiana. The software is based upon accepted transportation engineering methodologies. For example, PPAQ utilizes speed and delay estimation procedures based on planning methods provided in the 1994 Highway Capacity Manual, a report prepared by the Transportation Research Board (TRB) summarizing current knowledge and analysis techniques for capacity and level-of-service analyses of the transportation system.

These two computer programs interact as shown in Exhibit 1.

**Exhibit 1**

**Emission Calculation Process for Pennsylvania**



## WHERE DOES PENNSYLVANIA OBTAIN ITS DATA?

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### *Data Used in MOBILE*

Two major types of information are written into the MOBILE model by EPA: basic emission rates and travel weighting rates. EPA's Office of Mobile Sources obtains this information from a number of sources, including its new vehicle certification program, in-use vehicle random sample studies and special studies (including information from some state I/M programs). For more information on MOBILE, a users guide and various documents (as well as the model itself) are available through EPA's website (<http://www.epa.gov/OMSWWW/models.htm>).

**Basic emission rates** are those which are produced under very standardized conditions. The model then modifies (corrects and/or weights) these rates based on other model or input parameters. Rates are incorporated for model year and vehicle type. MOBILE also calculates an assumed amount of increase in emissions as vehicles accumulate mileage.

In addition to exhaust emissions, evaporative VOC emission sources from gasoline-powered vehicles are also included<sup>1</sup>:

- diurnal emissions (evaporated gasoline emissions generated by the rise in temperature over the course of a day when the vehicle is not being driven),
- hot soak emissions (evaporated gasoline emissions occurring after the end of a vehicle trip, due to the heating of the fuel, fuel lines, fuel vapors),
- running loss emissions (evaporated gasoline emissions occurring while a vehicle is driven, due to the heating of the fuel and fuel lines),
- resting loss emissions (small but continuous seepage and minor leakage of gasoline vapor through faulty connections, permeable hoses and other materials in the fuel system).

Evaporative emissions are very dependent on temperature and fuel volatility as well as vehicle model year.

**Travel Weighting Fractions.** Research has found that newer cars tend to be driven more. The model reflects this, using state-specific vehicle age distributions from registration data. The model also contains assumptions about trips per day and miles per day by age of the vehicle. This is important for exhaust emissions because these emissions are greater when the vehicle is not warmed up (cold start). Also, this information helps characterize evaporative emissions.

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<sup>1</sup> Some states use MOBILE to estimate refueling emissions (gasoline vapor emissions generated by the refueling of vehicles, where in the absence of controls the vapor in the vehicle fuel tank is displaced by the incoming liquid fuel and released to the atmosphere). Pennsylvania handles these emissions in the area source inventory.

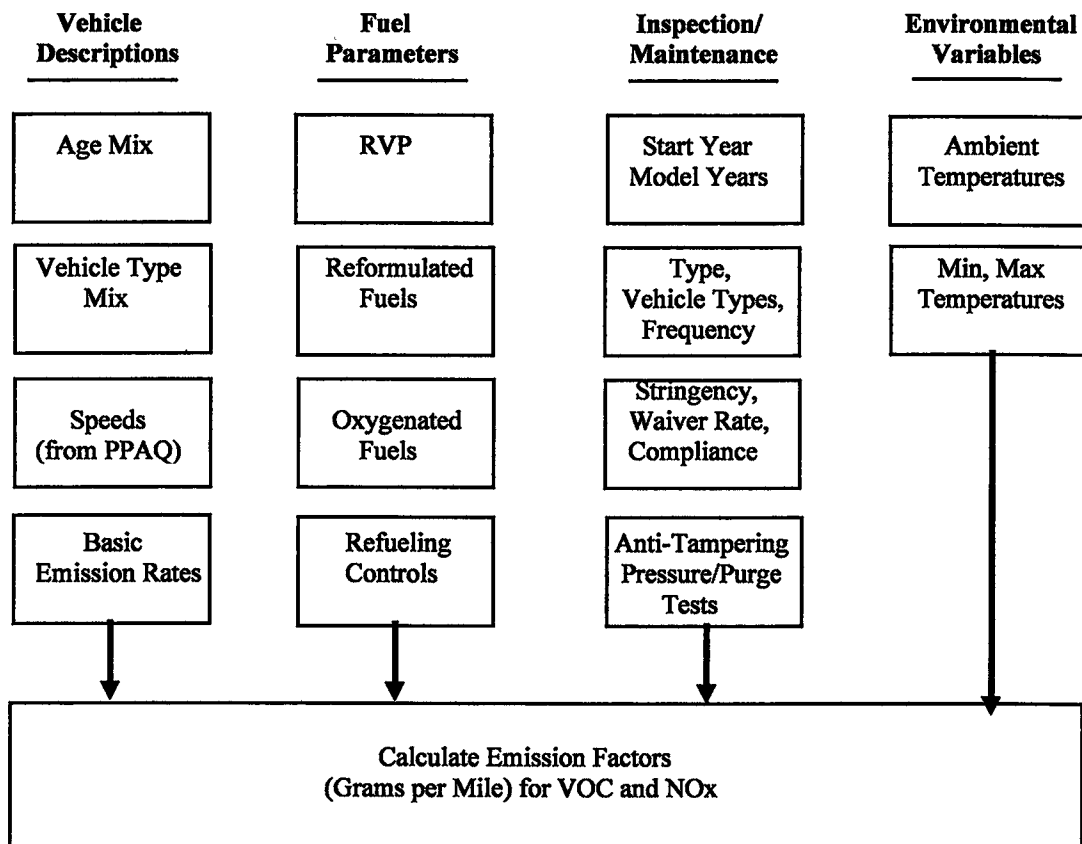


## ***What Are The Necessary Data Inputs to MOBILE?***

A large number of inputs to MOBILE are needed to fully account for the numerous vehicle and environmental parameters that affect emissions including traffic flow characteristics (as determined from the PPAQ software), vehicle descriptions, fuel parameters, inspection/maintenance program parameters, and environmental variables as shown in Exhibit 2. With some input parameters, MOBILE allows the user to choose default values, while others require area-specific inputs.

**Exhibit 2**

### **MOBILE Inputs**



For an emissions inventory, area specific inputs are used for all of the inputs shown in Exhibit 2 except for the basic emission rates, which are MOBILE defaults. In addition, Pennsylvania uses MOBILE default cold and hot start fractions (20.6 and 27.3 percent). A vehicle will generate more emissions when it is first operated (cold start). It generates emissions at a different rate when it is stopped and then started again within a short period of time (hot start). Cold/hot start fractions reflect what percent of the VMT was accrued after a cold start and after a hot start.

**Vehicle Descriptions.** Vehicle age distributions are input to MOBILE for each county based on registered vehicles reflecting July 1 summer conditions. These distributions are obtained from PennDOT's Bureau of Motor Vehicle Registration Database. Vehicle Type Mix is calculated by PPAQ from algorithms using a combination of MOBILE default percentages and PennDOT truck percentages from roadway data. (See also the discussion of Vehicle Type Pattern Data in the next section.) Speeds are discussed extensively in the next section.

**Fuel Parameters.** The same vehicle will produce different emissions using a different type of gasoline. Fuel control strategies can be powerful emission reduction mechanisms. An important variable in fuels for VOC emissions is its evaporability, measured by Reid Vapor Pressure.

MOBILE allows the user to choose among conventional (used in most of Pennsylvania), federal reformulated (now used in the Philadelphia area), oxygenated (not used in Pennsylvania) and low Reid Vapor Pressure (RVP) gasolines (used in the Pittsburgh area starting in 1998). Pennsylvania chooses the MOBILE inputs appropriate to the year and control strategy for the area being modeled.

MOBILE also allows users to calculate refueling emissions -- the emissions created when vehicles are refueled at service stations. Pennsylvania includes refueling emissions in its area source inventory and not in its highway vehicle inventory. However, that calculation uses a grams per gallon emission rate generated by MOBILE.

**Vehicle Emission Inspection/Maintenance (I/M) Parameters.** MOBILE allows users to vary inputs depending on the I/M program in place for the area or, of course, choose "no I/M program." The inputs include:

- program start year
- stringency level (failure rate) and pass/fail standards or "cutpoints"
- first and last model years subject to the program
- waiver rates
- compliance rates
- program type (test-only, test-and-repair, etc.)
- frequency of inspection (annual, biennial)
- vehicle type coverage
- test type (idle, loaded, etc.)
- technician training program

Some cutpoints (the emissions at which vehicles are failed) are contained in MOBILE, while others must be put in by the model user. Pennsylvania uses the parameters specific for the geographic area and year for which the modeling is being performed.

**Environmental Variables.** Evaporative emissions are influenced significantly by the temperatures of the surrounding air. Minimum, Maximum, and Ambient temperatures have been compiled for each county based on information from EPA's CHIEF bulletin board reflecting airport temperatures on emission violation days.

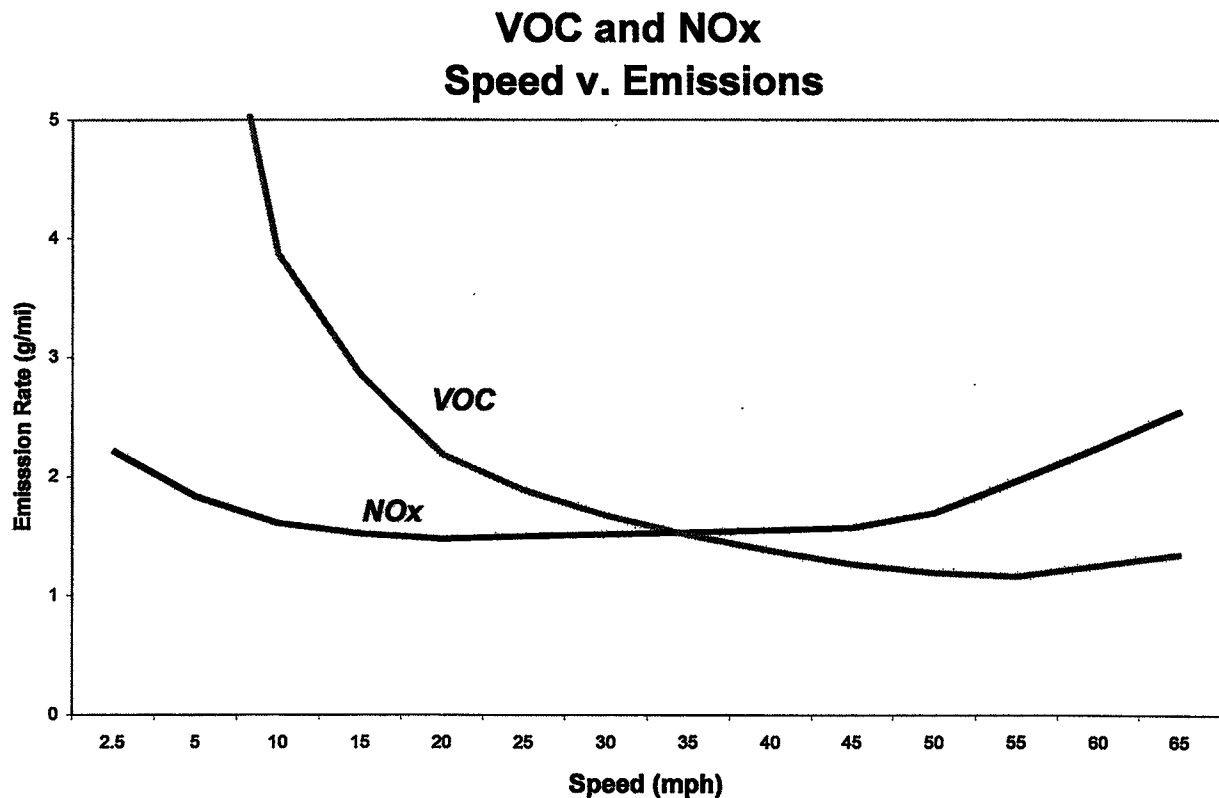
### ***Emission and Speed Relationships***

Of all the user-supplied input parameters, perhaps the most important is vehicle speed. Emissions of both VOC and NO<sub>x</sub> vary significantly with speed, but the relationships are not linear, as shown in Exhibit 3. While VOCs generally decrease as speed increases, NO<sub>x</sub> decreases only at the low speed range and increases steeply at higher speeds.

To obtain the best estimate of vehicle speeds, Pennsylvania uses the PPAQ set of programs, whose primary function is to calculate speeds and to organize and simplify the handling of large amounts of data needed for calculating speeds and for preparing MOBILE input files.

**Exhibit 3**

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PPAQ can also provide a link between transportation and air quality models, enabling models like MOBILE to take advantage of the wealth of information generated by transportation models in a form which is relevant for air quality. Transportation models are presently used in the Philadelphia and Pittsburgh areas and are being incorporated into the transportation planning process in other metropolitan areas in the Commonwealth.

## Roadway Data

The roadway data input to emissions calculations for Pennsylvania uses information from the Roadway Management System (RMS) maintained by PennDOT's Bureau of Planning and Research. PennDOT obtains this information from periodic visual and electronic traffic counts. RMS data is dynamic since it is continually reviewed and updated from new traffic counts and field visits conducted by PennDOT. Information on roadways included in the National Highway System is reviewed at least annually, while information on other roadways is reviewed at least biennially.

Periodically, a current "snapshot" of the RMS database is taken and downloaded to provide an up-to-date record of the Commonwealth's highway system for estimating emissions.

The RMS database contains all state highways, including the Pennsylvania Turnpike, divided into segments approximately 0.5 miles in length. These segments are usually divided at important intersections or locations where there is a change in the physical characteristics of the roadway (e.g. the number of lane changes). There are approximately 99,000 state highway segments for the 67 Pennsylvania counties contained in the RMS. Each of these segments contains an abundance of descriptive data, but only the following information is extracted for emission calculations:

- Lanes
- Distances
- Volumes in Average Annual Daily Traffic (AADT)
- Truck percentages
- PennDOT urban/rural classifications
- PennDOT functional class codes

RMS volumes and distances are used in calculating highway VMT totals for each county. As discussed in the next section, adjustments are needed to convert the volumes to an average July weekday. Lane values are an important input for determining the congestion and speeds for individual highway segments. Truck percentages are used in the speed determination process and are used to split volumes to individual vehicle types used by the MOBILE software.

Pennsylvania classifies its road segments by function, as well as whether it is located in an urban, small urban or rural area, as indicated below in Exhibit 4. The PennDOT urban/rural (UR) and functional classes (FC) are important indicators of the type and function of each roadway segment. The variables provide insights into other characteristics not contained in the RMS data that are used for speed and emission calculations. In addition, VMT and emission quantities are aggregated and reported using both UR and FC codes.

## Exhibit 4

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### PennDOT Classification Scheme: Urban/Rural Codes and Functional Class Codes

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Urban/Rural Code	1=Rural 2=Small Urban 3=Urban	
Functional Class	Rural Functional Classes Used For Rural Areas	Urban Functional Classes Used For Small Urban and Urban Areas
	1=Rural Freeway 2=Rural Other Principal Arterial 6=Rural Minor Arterial 7=Rural Major Collector 8=Rural Minor Collector 9=Rural Local	11=Urban Freeway 12=Urban Expressway 14=Urban Principal Arterial 16=Urban Minor Arterial 17=Urban Collector 19=Urban Local

*Note: Functional Classes 3,4,5,10,13,15,18 are not currently used in PennDOT's RMS database*

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## Additions and Adjustments to Roadway Data

Before the RMS data can be used by PPAQ for speed and emission calculations, several adjustments and additions must be made to the roadway data.

**1990 HPMS Adjustments:** According to EPA guidance, baseline inventory VMT computed from the RMS highway segment volumes must be adjusted to be consistent with Highway Performance Monitoring System (HPMS) VMT totals. The HPMS VMT reported for Pennsylvania is a subsystem of the RMS established to meet the data reporting requirements of the Federal Highway Administration (FHWA) and to serve as PennDOT's official source of highway information. Although it has some limitations, the HPMS system is currently in use in all 50 states and is being improved under FHWA direction.

The HPMS VMT totals are developed from the data contained in the RMS database at the time of reporting and serves as a "snapshot" of the RMS data for a particular year. Since the RMS database does not contain many local roads, a separate procedure is used by PennDOT to estimate total local VMT for the HPMS system. HPMS VMT summaries are prepared each year and reported by PennDOT urban/rural and functional class codes. The VMT contained in the HPMS reports are considered to represent average annual daily traffic (AADT).

Although the HPMS VMT and the roadway data used for an inventory emissions analysis are both based on data from the RMS system, differences do exist between them and include the following. First, the HPMS and inventory roadway data are "snapshots" of the RMS data taken at different times. Since the RMS is dynamic, changing constantly due to new data, differences will result between the data used for calculating HPMS VMT totals and the inventory data used for an emissions analysis. Second, local estimates of HPMS VMT are obtained through alternative procedures developed by PennDOT. However, the emissions inventory makes use of those few local roads contained in the RMS system. To account for such differences, adjustment factors are calculated and used to adjust the inventory roadway data to the reported HPMS VMT totals submitted to FHWA.

Adjustment factors are calculated which adjust the 1990 RMS VMT to be consistent with 1990 HPMS totals. These factors are developed for each county, urban/rural code, and functional class combination and are also applied to all future year runs. Adjustments for the “higher” functional classes (e.g. Freeway, Arterials - major routes) were very close to 1.000 since HPMS VMT is derived from RMS information, and the only difference in the data is that the “snapshot” for the emission calculations is taken at a different time than for the HPMS. “Lower” classes (e.g. local roads) require greater adjustment since a large part of the local system is not under state jurisdiction and is not in the RMS database. There is, of course, a significant amount of local road mileage in the state. It is assumed that those local streets that are in RMS are representative of all local streets in their area with respect to volume and speed, so that roadway mileage adjustment is appropriate.

The adjustment factors calculated above are applied by PPAQ during each run. The factors developed for the 1990 volumes are also used for any future year runs.

**Seasonal Adjustments to Volumes:** The RMS contains AADT volumes that are an average of all days in the year including weekends and holidays. An ozone emission analysis, however, is based on a typical July weekday. Therefore, those volumes must be seasonally adjusted. Seasonal factors were developed for each functional class and urban/rural code based on yearly count information prepared by PennDOT’s Bureau of Planning and Research. These factors are applied to the existing RMS AADT volumes to produce the July volumes.

**Additional Network Information:** The PPAQ software system allows for many additional variables other than those available in the RMS database. Using these variables improves the ability of Pennsylvania to incorporate real roadway conditions into its estimates. The variables include information regarding signal characteristics and other physical roadway features that can affect a roadway’s calculated congested speed. PPAQ’s ability to estimate congested speeds by road segment improves Pennsylvania’s emissions inventories because of the overwhelming role speed plays in emission rates. If specific information regarding these variables is known or obtained for areas, this information can be appended to the RMS database. Otherwise, default values are assumed based on information provided by the PPAQ input speed/capacity lookup data as described below.

Speed/capacity lookup data provides PPAQ with initial (free-flow with no congestion) speeds and capacities for different urban/rural code and functional class groupings. The initial speeds and capacities are used by PPAQ in determining the final congested speed for each roadway segment. Speeds can also be greatly impacted by signals and other roadway features. As a result, this data provides default signal densities (average number of signals per mile for different functional classes) as well as default values for variables that determine the decay of speed with varying levels of congestion. As discussed above, values from the speed/capacity data can be overridden for specific links by directly coding values to the roadway database segments. The speed capacity data was developed from a combination of sources including the following:

- Information contained in the 1994 Highway Capacity Manual
- PennDOT information on speeds and signal densities
- Engineering judgment

**24-hour Pattern Data:** Speeds and emissions vary considerably depending on the time of day (because of temperature) and congestion. Therefore, it is important to estimate the pattern by which roadway volume varies by hour of the day. The 24-hour pattern data provides PPAQ with

information used to split the daily roadway segment volumes to each of the 24 hours in a day. Pattern data is in the form of a percentage of the daily volumes for each hour. Distributions are provided for each county and functional class grouping. This data was developed from 24-hour count data compiled by PennDOT's Bureau of Planning and Research, according to the process in Procedures for Adjusting Traffic Count Data, 1991.

**Vehicle Type Pattern Data:** Basic emission rates may differ by vehicle type. These types are listed below in Exhibit 5.

## Exhibit 5

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### MOBILE Vehicle Types

1.	LDGV	- Light-Duty Gasoline Vehicles
2.	LDGT1	- Light-Duty Gasoline Trucks (<6,500 lbs)
3.	LDGT2	- Light-Duty Gasoline Trucks (<8,500 lbs)
4.	HDGV	- Heavy-Duty Gasoline Vehicles (>8,500 lbs)
5.	LDDV	- Light-Duty Diesel Trucks (<8,500 lbs)
6.	LDDT	- Light-Duty Diesel Trucks (<8,500 lbs)
7.	HDDV	- Heavy-Duty Diesel Vehicles (>8,500 lbs)
8.	MC	- Motorcycles

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MOBILE summary reports by vehicle type are also useful in knowing what kinds of vehicles generate emissions. The vehicle type pattern data is used by PPAQ to divide the hourly roadway segment volumes to the eight MOBILE vehicle types. Similar to the 24-hour pattern data, this data contains percentage splits to each vehicle type for every hour of the day. The vehicle type pattern data was developed from several sources of information:

- Hourly distributions for trucks and total traffic compiled by PennDOT's Bureau of Planning and Research, according to Procedures for Adjusting Traffic Counts, 1991
- PennDOT truck percentages from the RMS database
- MOBILE default vehicle type breakdowns

The vehicle type pattern data is developed for each county and functional class combination. First, RMS truck percentages are averaged for all roadways within a county, functional class grouping. Using this percentage data, the total roadway volume for any segment could be divided to both auto and truck vehicle type categories. However, these percentages do not yet enable volumes to be divided to each of the eight MOBILE vehicle types. As a result, MOBILE default vehicle type breakdowns are then used to divide the auto and truck percentages, calculated above, to each specific MOBILE vehicle type. PennDOT hourly distributions for trucks and total traffic are then used to create vehicle type percentage breakdowns for each hour of the day.

**Vehicle Type Capacity Analysis Factors:** Vehicle type percentages are provided to the capacity analysis section of PPAQ to adjust the speeds in response to trucks. That is, a given number of larger trucks take up more roadway space than a given number of cars, and this must be accounted for in the model. Capacity is adjusted based on the factors provided in this data. Values are developed from information in the 1994 Highway Capacity Manual and are specific to the various facility types.

## Producing Future Year Volumes

Growth factors are used to project future highway volumes from the volumes provided in the RMS database. Separate factors are derived for each county and highway functional class from an analysis of historic HPMS growth trends, coupled with estimates of population and employment growth from the U.S. Department of Commerce's Bureau of Economic Analysis (BEA). The factors are then applied to base year traffic volumes on each highway segment in the RMS network database.

The Pittsburgh and Philadelphia regions, however, use a different approach for determining future year volumes, since the larger metropolitan areas are required to use more sophisticated projection methods for transportation planning. These areas currently have traffic forecasting models in place as required by US Department of Transportation; VMT estimates for base and future years are obtained from the model runs. From these VMT estimates, growth factors are prepared which are then applied to the RMS database volumes similar to other regions in Pennsylvania.



## **SPEED/EMISSION ESTIMATION PROCEDURE**

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The previous sections have summarized the input data used for computing speeds and emission rates for Pennsylvania. This section explains how PPAQ and MOBILE use that input data to produce emission estimates. Exhibit 6 on the following page summarizes PPAQ's analysis procedure used for each of the 99,000 highway segments in the state.

Producing an emissions inventory with PPAQ requires a process of disaggregation and aggregation. Data is available and used on a very small scale -- individual ½ mile roadway segments 24 hours of the day. This data needs to first be aggregated into categories so that a reasonable number of MOBILE scenarios can be run, and then further aggregated and/or re-sorted into summary information that is useful for emission inventory reporting.

### ***Volume/VMT Development***

Before speeds can be calculated and MOBILE run, volumes acquired from RMS must be adjusted and disaggregated. Such adjustments include factoring to future years, seasonal adjustments, and disaggregating daily volumes to each hour of the day and to each of the eight MOBILE vehicle types.

**Future Year Volumes:** The RMS database contains up-to-date current year volumes. However, to conduct a future year analysis, these volumes must be factored to the year being analyzed. Growth factors have been prepared based on historic HPMS trends coupled with population and employment forecasts for each county, urban/rural area code, and functional class grouping. These growth factors are applied to the base year RMS volumes to obtain future year estimates that can be utilized by PPAQ.

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#### **Example:**

A typical freeway link in the RMS database is I-80 segment 2500 in Luzerne County, Pennsylvania. This link has an urban/rural code=1 which indicates the link is in a rural area, and a functional class=1 indicating a rural freeway. The average annual daily traffic (AADT) from the RMS database for this link in 1990 is 12,077 vehicles/day.

Growth factors have been developed to factor the 1990 volume to future years. For example, to factor the 1990 volume to the year 2002, a factor of 1.282 has been developed for Luzerne County rural freeways.

2002 volume = 12,077 vehicles/day x 1.282 = 15,483 vehicles/day

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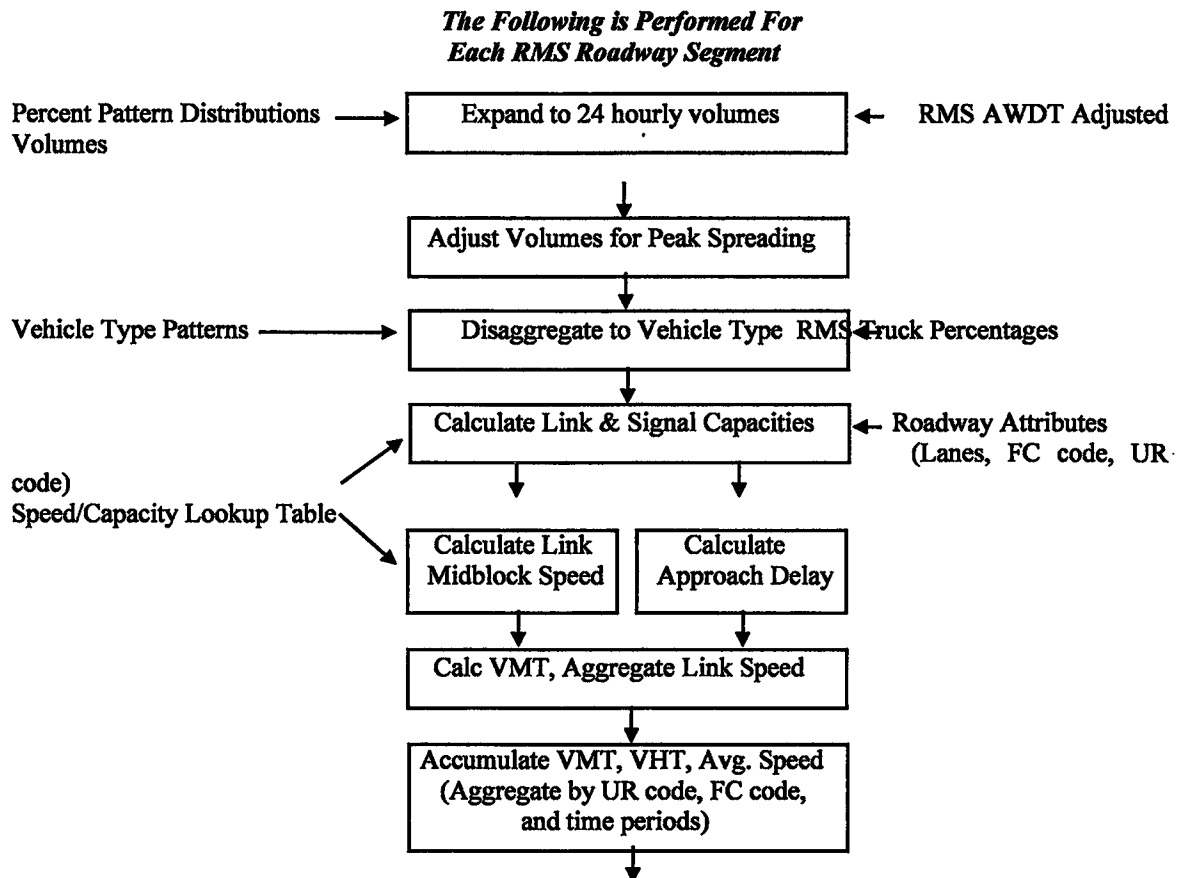
## Exhibit 6

### PPAQ Speed/Emission Estimation Procedure

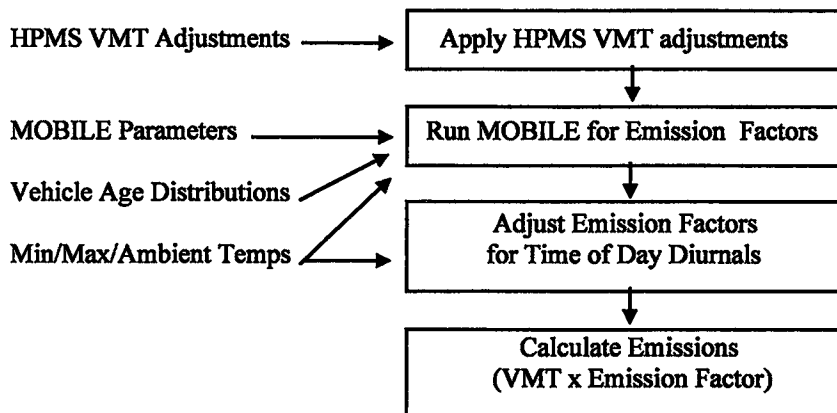
*Data From PPAQ Input Files  
Source (RMS)*

*PPAQ Analysis Process*

*Data from Roadway*



**The Following is Performed For Each Area, Functional Class & Time Period**



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**Seasonal Adjustments:** PPAQ takes the input daily volumes from RMS which represent AADT and seasonally adjusts the volumes to an average weekday in July. This adjustment utilizes factors developed for each functional class and urban/rural code. VMT can then be calculated for each link using the adjusted weekday volumes.

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**Example:**

Again, assume the rural freeway link: I-80 segment 2500 in Luzerne County, Pennsylvania. The average annual daily traffic (AADT) for this link in 1990 is 12,077 vehicles/day.

Seasonal factors have been developed for urban/rural code and functional class combinations. For an urban/rural code=1 and a functional class=1, the factor to convert from AADT to an average weekday in July is = 1.15

Average Weekday July Volume =  $12,077 \times 1.15 = 13,889$  vehicles/day

Total VMT (daily) for this link is calculated as volume x distance. The distance of this link as obtained from RMS is 0.286 miles.

1990 VMT =  $13,889 \text{ vehicles/day} \times 0.296 \text{ miles} = 41,111 \text{ vehicle-miles / day}$

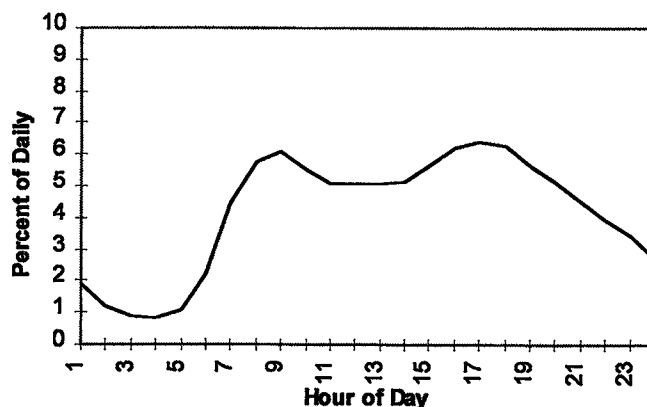
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**Disaggregation to 24 Hours:** After seasonally adjusting the link volume, the volume is split to each hour of the day. This allows for more accurate speed calculations (effects of congested hours) and allows PPAQ to aggregate VMT and speeds to different time periods for purposes of running MOBILE scenarios and reporting emissions.

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**Example:**

To support speed calculations and emission estimates by time of day, the July weekday volume is disaggregated to 24 hourly volumes. Temporal patterns were previously developed from PennDOT count data and input to PPAQ. For the I-80 rural freeway link with morning peak volumes similar to evening peak hours (neutral), the following temporal pattern is applied:



Using the I-80 segment for 1990, typical hourly volumes which result include:

8-9 a.m.	$6.0\% \times (41,111 \text{ vehicle miles} / 0.296\text{mi.}) = 833 \text{ vehicles/hour}$
(vph)	
12-1 p.m.	$5.0\% \times (41,111 \text{ vehicle .miles} / 0.296\text{mi.}) = 694 \text{ vph}$

5-6 p.m.

$$6.3\% \times (41,111 \text{ vehicle miles} / 0.296 \text{ mi.}) = 875 \text{ vph}$$

After dividing the daily volumes to each hour of the day, PPAQ identifies hours that are overly congested. For those hours, PPAQ then spreads a portion of the volume to other hours within the same peak period, thereby approximating the “peak spreading” that normally occurs in such over-capacity conditions.

**Disaggregation to Vehicle Type:** EPA requires VMT estimates to be prepared by vehicle type, reflecting specific local characteristics. As a result, for Pennsylvania’s emission inventory, the hourly volumes are disaggregated to the eight MOBILE vehicle types based on count data assembled by PennDOT.

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**Example:**

Disaggregation of the total I-80 volume (by hour) to the various vehicle types would include the following:

Total Volume 8-9 am = 833 vph

Vehicle Type Volume 8-9 am:

LDGV	54.1%	451 vph
LDGT1	19.7%	164 vph
LDGT2	13.8%	115 vph
HDGT	2.7%	22 vph
LDDV	2.3%	19 vph
LDDT	1.8%	15 vph
HDDV	4.8%	40 vph
MC	0.8%	7 vph

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## ***Speed/Delay Determination***

EPA recognizes that the estimation of vehicle speeds is a difficult and complex process. Because emissions are so sensitive to speeds, it recommends special attention be given to developing reasonable and consistent speed estimates; it also recommends that VMT be disaggregated into subsets that have roughly equal speed, with separate emission factors for each subset. At a minimum, speeds should be estimated separately by roadway functional class. The computational framework used for this analysis meets and exceeds that recommendation: Speeds are individually calculated for each roadway segment and hour and incorporate the delays encountered at signals. VMT and vehicle hours of travel (VHT) are then accumulated for each cell of the county/functional class/time of day matrix; accumulated VMT is divided by VHT to produce the cell’s average speed.

To calculate speeds, PPAQ first obtains initial capacities (how much volume the roadway can serve before heavy congestion) and free-flow speeds (speeds assuming no congestion) from the speed/capacity lookup data. As described in previous sections, this data contains default roadway information indexed by the urban/rural code and functional class. For areas with known characteristics, values can be directly coded to the RMS database and the speed/capacity data can be overridden. However, for most areas where known information is not available, the speed/capacity lookups provide valuable default information regarding speeds, capacities, signal

densities and characteristics, and other capacity adjustment information used for calculating congested delays and speeds.

---

**Example:**

The speed/capacity lookup table is used to obtain important data used for link speed calculations. For the I-80 link with an urban/rural code = 1 (rural) and a functional class = 1 (freeway), the lookup table provides information including the following:

freeflow speed = 65 mph  
capacity = 1800 vph per lane  
number of signals = 0

This information is used along with the physical characteristics of the roadway to calculate the delay (including congestion) to travel this link during each hour of the day:

For example: The I-80 link is calculated to have a travel time, including delay of 17.76 seconds for the 8-9am hour

Total travel time, in vehicle hours, for the 8-9am hour is calculated as:

$$\text{VHT (8-9am)} = 17.76 \text{ seconds} \times 833 \text{ vph} / 3600 \text{ sec/hr} = 4.12 \text{ vehicle hours}$$

---

The result of this process is an estimated average travel time for each hour of the day for each highway segment. The average time can be multiplied by the volume to produce vehicle hours of travel (VHT).

### ***HPMS and VMT Adjustments***

Volumes must also be adjusted to account for differences with the HPMS VMT totals, as described previously. VMT adjustment factors are provided as input to PPAQ, and are applied to each of the roadway segment volumes. These factors were developed from 1990 data; however, they are also applied to any future year runs. The VMT added or subtracted to the RMS database assumes the speeds calculated using the original volumes for each roadway segment for each hour of the day.

---

**Example:**

Using the Luzerne County I-80 rural freeway link example, the daily assigned volume is adjusted to account for reconciliation with the HPMS VMT. RMS VMT (in AADT) for Luzerne County rural freeways totals 962,559 vehicle miles in 1990. HPMS VMT (in AADT) as supplied by PennDOT and reported to FHWA totals to 990,088 vehicle miles for the rural freeways. A factor is developed by dividing the HPMS VMT by the RMS VMT:

$$\text{HPMS adjustment factor for Luzerne County rural freeways} = 990,088 / 962,559 = 1.029$$

This factor is held constant in all future years. As an example, this adjustment is made to the I-80 freeway link VMT for the 8-9am hour after speed calculations are made, and produces the final July weekday VMT for this hour used for Ozone runs.

---

$$\text{I-80 Link VMT (8-9am)} = 833\text{vph} \times 0.296 \text{ miles} \times 1.029 = 254 \text{ vehicle miles}$$


---

## ***VMT and Speed Aggregation***

While highway volumes, vehicle mixes, and speeds are calculated on the basis of individual highway segments and hours, this data is far too disaggregate to apply directly to MOBILE. Therefore, PPAQ has been set up to automatically accumulate VMT and VHT by larger geographic areas, highway functional class, and time periods as shown in Exhibit 7.

### **Exhibit 7**

#### **VMT/VHT Aggregation Scheme**

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County entries			67
Urban/Rural Code	1=Rural 2=Small Urban 3=Urban		
Functional Class entries	1=Rural Freeway 2=Rural Other Principal Arterial 6=Rural Minor Arterial 7=Rural Major Collector 8=Rural Minor Collector 9=Rural Local	11=Urban Freeway 12=Urban Expressway 14=Urban Principal Arterial 16=Urban Minor Arterial 17=Urban Collector 19=Urban Local	18
Time Periods	AM Peak Period (7:00 to 10:00 AM) Midday (10:00 AM to 4:00 PM) PM Peak Period (4:00 to 6:00 PM) Night (6:00 PM to 7:00 AM)		4 entries
potential combinations			4,824

---

Geographic aggregation is performed by urban, small urban, and rural areas of each county. Functional class aggregation is according to PennDOT's eighteen standard functional classes, respecting urban, small urban and rural definitions. Time period aggregation is according to AM peak, PM peak, Midday, and Night as defined in Exhibit 6. For an individual county, this creates a potential for 72 possible combinations, each of which becomes an input MOBILE scenario. This allows each MOBILE scenario to represent the actual VMT mix, speed, and potentially cold/hot start fraction for that geographic / highway / time combination. Altogether then, there are potentially 4,824 combinations for which speeds and VMT are computed and emissions are calculated with MOBILE.

Once all links are processed and VMT and VHT accumulated, average speeds are calculated for each cell of the accumulation matrix by dividing VMT by VHT. This speed is then input to the MOBILE scenario as the average speed for that cell.

---

**Example:**

The hourly VMT and VHT quantities are accumulated into a matrix of VMT and VHT for each combination of county, urban/rural code, functional class, and time period.

For this example, Luzerne County rural freeways during the morning peak period (7-10am) will carry 155,904 vehicle miles of travel, and will involve 2,399 vehicle hours of travel. Dividing the accumulative VMT by the cumulative VHT produces the average operating speed for this cell:

$$\text{Average speed} = \text{VMT} / \text{VHT} = 155,904 / 2,399 = 64.9 \text{ mph}$$

Thus the Luzerne County rural freeways will operate at an average speed of 65.0 mph during the morning peak period. Overall, on a 24-hour basis the total VMT for Luzerne rural freeways will be 1,148,251 vehicle miles, and the average travel speed will be 65.0 miles per hour.

---

### ***MOBILE Emissions Run***

After computing speeds and aggregating VMT and VHT, PPAQ prepares input files to be run in EPA's MOBILE program which is used to produce VOC and NOx emission factors in grams of pollutant per vehicle mile. The process uses an unmodified version of the MOBILE program that was obtained directly from EPA.

The MOBILE input file prepared by PPAQ contains the following:

- MOBILE template containing appropriate parameters and program flags
- Temperature data specific to the county being run
- Vehicle age data for the county being run
- Scenario data - contains VMT mix, average speeds specific to scenario as produced by PPAQ

---

**Example:**

A MOBILE input file is created by PPAQ for Luzerne County. This file contains separate scenarios for each urban/rural code, functional class, and time period combination. A scenario represents a separate MOBILE run with different emission factors calculated and output for each run.

For this example, Luzerne County rural freeways during the morning peak period (7-10am) will be run as a scenario. Specific data including temperature data, vehicle mix data, and speeds are supplied by PPAQ for this morning period scenario.

---

### ***Time of Day and Diurnal Emissions***

The highway system VMT and speeds are aggregated according to four time periods. Because diurnal emissions are calculated by MOBILE on the basis of 24-hour minimum-to-maximum



temperatures, special processing is needed to accurately estimate the emissions component by allocating daily diurnal emissions to the various time periods. This is done within the computational process by adjusting the emission factors for each time period to correctly account for that time period's share of the daily diurnal emissions.

### ***Process MOBILE Output***

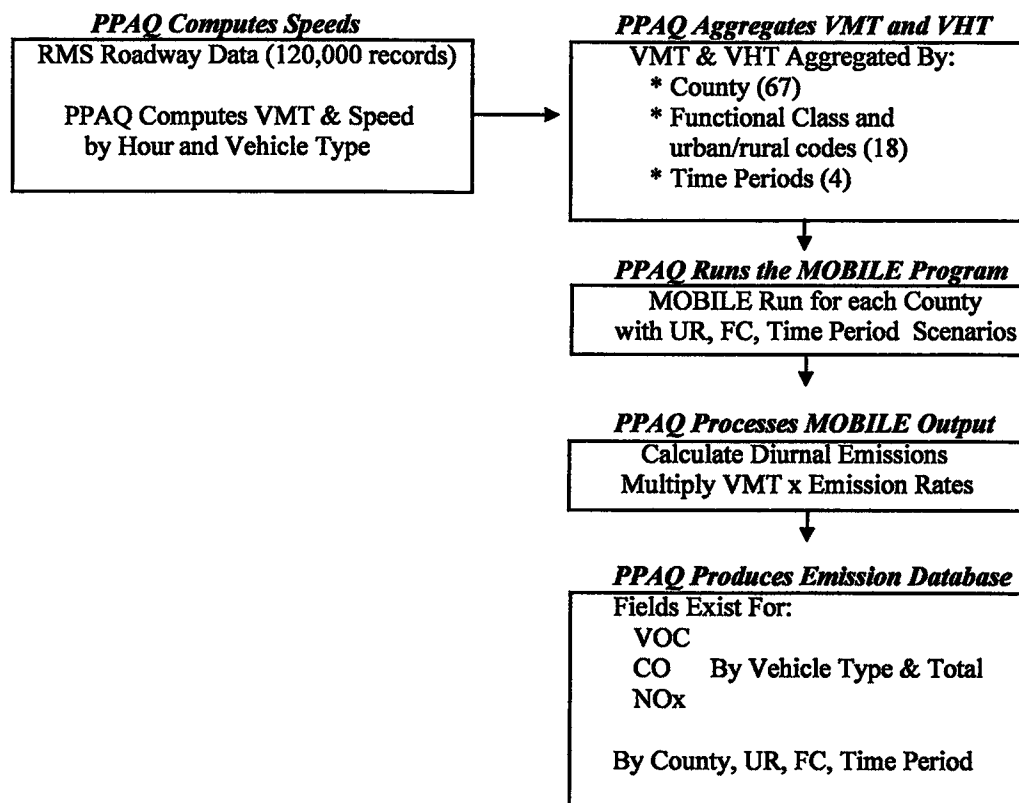
After MOBILE has been run, PPAQ processes the MOBILE output files and compiles the emission factors for each scenario. Using the above methodology, it allocates daily diurnal emissions to each of the time periods. Using the MOBILE emission factors, PPAQ calculates emission quantities by multiplying the emission factors by the aggregated VMT totals. PPAQ then produces an emissions database summarizing VMT, VHT, VOC, and NOx emissions as shown in Exhibit 8.

### **Exhibit 8**

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#### **Summary of PPAQ's Methodology in Producing Emissions Summary**

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**Example:**

Luzerne County rural freeways during the morning peak period (7-10am) were run as a scenario in MOBILE. Based on the input information, MOBILE outputs emission factors by vehicle type for this scenario as shown below:

*Composite Emission Factors (grams/mile) from MOBILE output*

Vehicle Type:	LDGV	LDGT1	LDGT2	HDGT	LDDV	LDDT	HDDV	MC
VOC:	1.22	1.86	2.42	3.68	0.36	0.54	1.13	4.53
NOX:	2.41	3.16	3.66	7.14	1.84	4.15	5.84	8.71

PPAQ reads these emission factors from the MOBILE output file and multiplies them by the Luzerne County morning peak period rural freeway VMT to obtain emission totals for this scenario. (Note: emissions shown in kg/day which is converted to tons/day in SIP narratives)

PPAQ computes emissions as follows for this scenario:

Veh Type	VMT	Emission Factors (g/mi)				Emissions (kg/day)	
			VOC	NOX		VOC	NOX
LDGV	84,344	x	1.22	2.41	=	102.9	203.3
LDGT1	30,713	x	1.86	3.16	=	57.1	97.1
LDGT2	21,515	x	2.42	3.66	=	52.1	78.7
HDGT	4,209	x	3.68	7.14	=	15.5	30.1
LDDV	3,586	x	0.36	1.84	=	1.3	6.6
LDDT	2,806	x	0.54	4.15	=	1.5	11.6
HDDV	7,483	x	1.13	5.84	=	8.5	43.7
MC	1,248	x	4.53	8.71	=	5.7	10.9
Total	155,903					244.6	482.0

The emissions for this scenario are reported and stored in an output database file which contains a record for each scenario with fields containing VMT, VHT, VOC emissions, and NOX emissions. Fields exist for each vehicle type and for the total of all vehicle types as shown below.

*Reported by Vehicle Type 1-8 and Total — Repeated for  
VHT,HC,NOX*

Cnty	UR	FC	Time	VMT1	VMT2	VMT3	VMT4	VMT5	VMT6	VMT7	VMT8
VMTtot											
Luze	1	1	AM	84,344	30,713	21,515	4,209	3,586	2,806	7,483	1,248
				155,903							

				VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8
VHTtot				1,298	473	331	65	55	43	115	19
				2,399							

				VOC1	VOC2	VOC3	VOC4	VOC5	VOC6	VOC7	VOC8
VOCtot				102.9	57.1	52.1	15.5	1.3	1.5	8.5	5.7
				244.6							

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	NOX1	NOX2	NOX3	NOX4	NOX5	NOX6	NOX7	NOX8
<b>NOXtot</b>								
482.0	203.3	97.1	78.7	30.1	6.6	11.6	43.7	10.9

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## RESOURCES

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### **MOBILE model**

Modeling Page within EPA's Office of Mobile Sources Website (<http://www.epa.gov/omswwww/models.htm>) contains a downloadable model, MOBILE users guide and other information. It also contains documents relating to the next version of MOBILE (MOBILE6) expected in 1999.

"AP-42" document, "Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources," as updated by Supplement A (January 1991), available in hard-copy only. This material is also in the process of being revised and updated. Contact AP-42 Project, Test and Evaluation Branch, EPA, 2565 Plymouth Road, Ann Arbor, MI 48105.

*Highway Vehicle Emission Estimates* (June 1992) and *Highway Vehicle Emission Estimates II* (May 1995) discusses how EPA obtains data for MOBILE and some of the shortcomings in earlier models. Similar discussions of the present version's shortcomings are discussed in papers available at the website.

"MOBILE5, Information Sheet #5, Inclusion of New 2004 NO<sub>x</sub> Standard for Heavy-Duty Diesel Engines in MOBILE5a and MOBILE5b Modeling," US EPA, January 30, 1998.

"MOBILE5, Information Sheet #6, Effects of the New National Low Emission Vehicle Standard for Light-Duty Gasoline Fueled Vehicles," US EPA, July 1998.

"MOBILE5, Information Sheet #7, NO<sub>x</sub> Benefits of Reformulated Gasoline Using MOBILE5a," US EPA, September 1998.

### **Traffic Engineering**

*1994 Highway Capacity Manual*, Transportation Research Board, presents current knowledge and techniques for analyzing the transportation system.

*Procedures for Adjusting Traffic Count Data*, 1991 edition, Pennsylvania Department of Transportation, Bureau of Planning and Research

*Traffic Data Collection and Factor Development Report, 1996 Data*, Pennsylvania Department of Transportation, Bureau of Planning and Research.

## Highway Vehicle Inventory Glossary

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**AADT:** Average Annual Daily Traffic, average of ALL days.

**AWDT:** Average Weekday Daily Traffic

**Basic emission rates:** MOBILE emission rates based on the applicable Federal emission standards and the emission control technologies characterizing the fleet in various model years.

**Cold start:** parameter in MOBILE that accounts for additional emissions resulting from a cold-started engine.

**Diurnals:** the pressure-driven evaporative HC emissions resulting from the daily increase in temperature

**Emission rate or factor:** expresses the amount of pollution emitted per unit of activity. For highway vehicles, usually in grams of pollutant emitted per mile driven.

**FC:** Functional code, applied in data management to road segments to identify their type (freeway, local, etc.)

**Fuel volatility:** The ability of fuel components to evaporate, thus entering the atmosphere as pollution. Fuel volatility is usually measured as Reid Vapor Pressure (RVP) in pounds per square inch. The lower the RVP, the less volatile the fuel.

**Growth factor:** Factor used to convert volumes to future years

**HPMS:** Highway Performance Monitoring System, PennDOT's official source of highway information and a subset of RMS.

**I/M:** Vehicle emissions inspection/maintenance programs ensure that vehicle emission controls are in good working order throughout the life of the vehicle. The programs require vehicles to be tested for emissions. Most vehicles that do not pass must be repaired.

**MOBILE:** The model EPA has developed and which Pennsylvania uses to estimate emissions from highway vehicles.

**Pattern data:** Extrapolations of traffic patterns (such as how traffic volume on road segment types varies by time of day, or what kinds of vehicles tend to use a road segment type) from segments with observed data to similar segments.

**Program flag:** In MOBILE, a numeric code which tells the program such things as how data will be provided by user (or whether default will be used) or how to tailor outputs.

**PPAQ:** Post-Processor for Air Quality, a set of programs that estimate speeds and processes MOBILE emission rates.

**RMS:** Roadway Management System, a database maintained by PennDOT from traffic counts and field visits

***Scenario:*** a MOBILE run with a specific set of geographical, time period, highway facility and control strategy assumptions.

***Segment:*** (*referred to as link*) division of roadway in the PennDOT Roadway Management System. Usually represents 0.5 mile segments of roadway.

***UR:*** Urban/rural code, applied in data management to identify whether a road segment is urban, small urban or rural.

***VHT:*** vehicle hours traveled.

***VMT:*** vehicle miles traveled. In modeling terms, it is the simulated traffic volumes times link length.

***Vehicle Type:*** One of eight types, distinguished primarily by fuel type and/or weight, used in MOBILE modeling.

# **APPENDIX C**

## **SUMMARY TABLES AND DOCUMENTATION FOR PHILADELPHIA HIGHWAY VEHICLE INVENTORY**

**SUMMARY VOC NOx**  
**PHILADELPHIA 5-COUNTY AREA**

**ADJUSTMENT TABLE FOR PHASE II RFG**

Since Phase II RFG NOx credits are calculated "off-model", they are not included in individual vehicle type or functional class emission outputs in this appendix (Tabulations 4 and 5).  
Adjusted kilogram and ton totals by county which do include this credit are provided in this table.

**Control Strategy Scenario: kilograms/day**

	1999		2002		2005	
County	VOC (kg/day)	NOx (kg/day)	VOC (kg/day)	NOx (kg/day)	VOC (kg/day)	NOx (kg/day)
Bucks	16,177	20,432	12,774	17,427	11,371	16,221
Chester	10,914	17,539	8,850	15,087	8,017	14,252
Delaware	10,755	12,323	8,462	10,442	7,596	9,770
Montgomery	19,123	24,872	14,923	20,974	13,164	19,378
Philadelphia	23,465	24,265	18,059	20,557	15,879	18,779
<b>Area Total</b>	<b>80,435</b>	<b>99,431</b>	<b>63,068</b>	<b>84,487</b>	<b>56,027</b>	<b>78,400</b>

**Control Strategy Scenario: tons/day**

	1999		2002		2005	
County	VOC (tons/day)	NOx (tons/day)	VOC (tons/day)	NOx (tons/day)	VOC (tons/day)	NOx (tons/day)
Bucks	17.83	22.52	14.08	19.21	12.53	17.88
Chester	12.03	19.33	9.76	16.63	8.84	15.71
Delaware	11.86	13.58	9.33	11.51	8.37	10.77
Montgomery	21.08	27.42	16.45	23.12	14.51	21.36
Philadelphia	25.87	26.75	19.91	22.66	17.50	20.70
<b>Area Total</b>	<b>88.66</b>	<b>109.60</b>	<b>69.52</b>	<b>93.13</b>	<b>61.76</b>	<b>86.42</b>

\*\* Includes Phase II RFG NOx credit per EPA guidance.



## **LIST OF TABULATIONS**

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- 1. Summary VMT, VOC and NOx Inventory and Forecast by County**
- 2. PA97 W/ ASM I/M Program Modeling Parameters**
- 3. Control Strategy Emissions Component Breakdown**
- 4. VMT, VOC, CO and NOx Inventory and Forecast Emissions by County by Functional Class**
- 5. VMT, VOC, CO and NOx Inventory and Forecast Emissions by County by Vehicle Type**
- 6. Philadelphia 5-County Area MOBILE Input Files**
  - a. 1999 Control Strategy Scenario**
  - b. 2002 Control Strategy Scenario**
  - c. 2005 Control Strategy Scenario**

## **Summary VMT, VOC & NOx Inventory and Forecast by County**

**SUMMARY VMT, VOC, and NOx INVENTORY  
FOR HIGHWAY VEHICLES BY COUNTY**

<i>Scenario</i>				<i>Uncontrolled Baseline</i>		<i>Adjusted Baseline</i>		<i>Control Strategy</i>	
<b>County</b>	<b>1990 VMT</b>	<b>VMT</b>	<b>Total Growth</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>
	<i>Ave. Speed</i>	<i>Ave. Speed</i>	<i>(from 1990)</i>					<i>% Reduction (from 1999 Adj. Base)</i>	
<b>1999</b>									
Bucks	12,850,048	14,829,484	1.15	35.42	31.98	28.25	28.01	17.83	22.52
	26.4	23.5						-36.9%	-19.6%
Chester	10,147,864	12,712,974	1.25	23.00	27.18	17.73	22.24	12.03	19.33
	33.8	31.6						-32.1%	-13.1%
Delaware	8,279,044	10,201,547	1.23	23.67	19.49	18.84	16.40	11.86	13.58
	23.7	22.7						-37.1%	-17.2%
Montgomery	16,839,969	19,653,334	1.17	41.19	38.92	34.41	34.55	21.08	27.42
	26.8	25.5						-38.7%	-20.6%
Philadelphia	16,485,464	17,352,364	1.05	53.57	38.83	49.23	37.59	25.87	26.75
	20.7	19.9						-47.5%	-28.8%
<b>Area Total</b>	<b>64,602,389</b>	<b>74,749,703</b>	<b>1.16</b>	<b>176.85</b>	<b>156.40</b>	<b>148.45</b>	<b>138.80</b>	<b>88.66</b>	<b>109.60</b>
	25.2	23.9						-40.3%	-21.0%

**SUMMARY VMT, VOC, and NOx INVENTORY  
FOR HIGHWAY VEHICLES BY COUNTY**

Scenario				Uncontrolled Baseline		Adjusted Baseline		Control Strategy	
County	1990 VMT	VMT	Total Growth	VOC (tons/day)	NOx (tons/day)	VOC (tons/day)	NOx (tons/day)	VOC (tons/day)	NOx (tons/day)
	Ave. Speed	Ave. Speed	(from 1990)					% Reduction (from 2002 Adj. Base)	
<b>2002</b>									
Bucks	12,850,048	15,360,723	1.20	36.61	32.34	27.43	27.39	14.08	19.21
	26.4	22.7						-48.7%	-29.8%
Chester	10,147,864	13,455,192	1.33	24.01	27.88	17.18	21.71	9.76	16.63
	33.8	30.8						-43.2%	-23.4%
Delaware	8,279,044	10,565,271	1.28	24.40	19.70	18.40	16.05	9.33	11.51
	23.7	22.2						-49.3%	-28.3%
Montgomery	16,839,969	20,292,551	1.21	42.02	39.13	33.61	33.79	16.45	23.12
	26.8	25.1						-51.1%	-31.6%
Philadelphia	16,485,464	17,553,363	1.06	53.29	38.26	48.02	36.63	19.91	22.66
	20.7	19.7						-58.5%	-38.2%
Area Total	64,602,389	77,227,100	1.20	180.33	157.30	144.64	135.57	69.52	93.13
	25.2	23.5						-51.9%	-31.3%

**SUMMARY VMT, VOC, and NOx INVENTORY  
FOR HIGHWAY VEHICLES BY COUNTY**

<b>Scenario</b>				<b>Uncontrolled Baseline</b>		<b>Adjusted Baseline</b>		<b>Control Strategy</b>	
<b>County</b>	<b>1990 VMT</b>	<b>VMT</b>	<b>Total Growth</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>	<b>VOC (tons/day)</b>	<b>NOx (tons/day)</b>
	<i>Ave. Speed</i>	<i>Ave. Speed</i>	<i>(from 1990)</i>					<b>% Reduction (from 2005 Adj. Base)</b>	
<b>2005</b>									
Bucks	12,850,048	15,892,353	1.24	38.45	33.09	27.04	27.16	12.53	17.88
	26.4	22.0						-53.6%	-34.2%
Chester	10,147,864	14,204,360	1.40	25.64	28.95	17.02	21.54	8.84	15.71
	33.8	29.9						-48.1%	-27.1%
Delaware	8,279,044	10,928,827	1.32	25.62	20.17	18.25	15.91	8.37	10.77
	23.7	21.6						-54.1%	-32.3%
Montgomery	16,839,969	20,932,278	1.24	43.54	39.84	33.28	33.53	14.51	21.36
	26.8	24.7						-56.4%	-36.3%
Philadelphia	16,485,464	17,754,508	1.08	53.69	38.17	47.49	36.14	17.50	20.70
	20.7	19.6						-63.1%	-42.7%
<b>Area Total</b>	<b>64,602,389</b>	<b>79,712,326</b>	<b>1.23</b>	<b>186.94</b>	<b>160.22</b>	<b>143.08</b>	<b>134.29</b>	<b>61.76</b>	<b>86.42</b>
	<b>25.2</b>	<b>23.0</b>						<b>-56.8%</b>	<b>-35.6%</b>

## **PA97 w/ ASM I/M Program Modeling Parameters**

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## Philadelphia 5-County Area MOBILE Input Parameters

**TABLE 1a.**

	2005 Uncontrolled Baseline	2005 Adjusted Baseline	2005 Control Strategy
<b>CONTROL FLAGS</b>			
TAMFLG 1= Use Default, 2= Input	1	1	1
SPDFLG 1= One speed All Vehicle Types	1	1	1
VMFLAG 1= Use Default, 2= One mix for Each scenario	2	2	2
MYRMRFG 1= Use Default, 3= Input Registration Data	3	3	3
NEWFLG 1= Use Default BER's, 2= Input Alternative BER's 5= Disable CAAA BER's	5	5	2
IMFLAG 1= No I/M, 2= One I/M, 3=Two I/M / 1= No TTC credits, 2= 100% TTC credits	2 / 1	2 / 1	3 / 2
ALHFLG 1= No Emission Factor Adjustments	1	1	1
ATPFLG 1= No ATP, 2= ATP, 5= ATP and Pressure 8= ATP, Pressure, and Purge	1	1	8 <sup>1</sup>
RLFLAG 1= Uncontrolled Refueling, 5= Not modelled in mobile sources	5	5	5
TEMFLG 1= Weighted Temps	1	1	1
NMHFLG 3= VOC's	3	3	3

<sup>1</sup> PA97 - gas cap pressure for 1975 & newer model years (40% credit of EPA Pressure).

PA97 w/ASM - 1975-81 receive a gas cap pressure test.

PA97 w/ASM - 1981 & newer receive the full EPA Pressure test.

# Philadelphia 5-County Area MOBILE Input Parameters

**TABLE 1b.**

	2005 Uncontrolled Baseline	2005 Adjusted Baseline	2005 Control Strategy	
<b>ONE-TIME DATA:</b>				
<b>Registration Distribution Records</b> (* Varies by County, using 1993 Registration Data)	*	*	*	*
<b>Alternate BER Record:</b> (* Alternative BER's are entered in the Control Strategy to account for the 2004 HDDE NOx Standard.)	None	None	*	*
<b>I/M Descriptive Records:</b>	#1	#1	I/M Record #1 #2	
Program Start Year	84	84	84	84
Stringency Level	17.8	17.8	20	20
First Model Year	68	68	75	81
Last Model Year	20	20	20	20
Waiver Rate PRE- 81 Vehs (%)	2.0	2.0	3.0	3.0
Waiver Rate, Post- 81 Vehs (%)	1.1	1.1	3.0	3.0
Compliance Rate (%)	94	94	96	96
Program Type <sup>1</sup> 1= Test Only 2= Test & Repair (Computerized)	2	2	1	1
Inspection Frequency 1= Annual, 2= Biennial	1	1	1	1
Veh. Types Subject to Inspection (1= No, 2= Yes)				
LDGV	2	2	2	2
LDGT1	2	2	2	2
LDGT2	1	1	1	1
HDGV	1	1	1	3
Test Type 1= Idle, 2= 2 Speed Idle (2500/idle) 3= ASM, 4= IM240	2	2	2	2
Non-Default Cut Points (1= No, 2= Yes)				
Alt. I/M Credit Flags(1= Use Default, 2= Input)	1	1	1	1
File 1	1	1	1	1
File 2				
Cutpoint for HC	220.00	220.00	220.00	50.00
Cutpoint for CO	1.20	1.20	1.20	15.00
Cutpoint for NOX	999.00	999.00	999.00	1.00

<sup>1</sup> PA97 ASM Test & Repair I/M Program is modeled as test only to claim 100% effectiveness.



# Philadelphia 5-County Area MOBILE Input Parameters

**TABLE 1c.**

	2005 Uncontrolled Baseline	2005 Adjusted Baseline	2005 Control Strategy
<b>ONE TIME DATA (Cont'd):</b>			
<b>ATP Descriptive Record:</b>	None	None	
Program Start Year			98
First model Year			75
Last Model Year			20
Veh. Types Subject to Inspection (1= No, 2= Yes)			
LDGV			2
LDGT1			2
LDGT2			2
HDGV			1
Program Type (1= Test Only, 2= Test and Repair) <sup>1</sup>			1
Inspection Frequency (1=Annual, 2= Biennial)			1
Compliance Rate (%)			96
Inspections Performed (1= No, 2= Yes)			
Air Pump System			2
Catalyst			2
Fuel Inlet Restrictor			2
Tailpipe Lead Deposit Test			1
EGR System			2
Evaporative Emission Control System			2
PCV System			2
Gas Cap			2
<b>Functional Pressure Test Record:</b>	None	None	
Start Year			98
First Model Year <sup>2</sup>			75 / 81
Last Model Year			20
Veh. Types Subject to Inspection (1= No, 2= Yes)			
LDGV			2
LDGT1			2
LDGT2			2
HDGV			1
Program Type (1= Test only, 2= Test and repair)			1
Inspection Frequency (1= Annual, 2= Biennial)			1
Compliance Rate (%)			96

<sup>1</sup> PA97 ASM Test & Repair I/M Program is modeled as test only to claim 100% effectiveness.

<sup>2</sup> PA97 - Gas cap pressure for 1975 & newer model years (40% credit of EPA Pressure).

PA97 w/ASM - 1975-81 receive gas cap pressure tests.

PA97 w/ASM - 1981 & newer model years receive the full EPA pressure test.

# Philadelphia 5-County MOBILE Input Parameters

**TABLE 1d.**

	2005 Uncontrolled Baseline	2005 Adjusted Baseline	2005 Control Strategy
<b>ONE-TIME DATA (Cont'd):</b>			
<b>Functional Purge Test Recod:</b>	None	None	
Start Year			98
First Model Year			81
Last Model Year			20
Veh. Types Subject to Inspection (1=No, 2= Yes)			
LDGV			2
LDGT1			2
LDGT2			2
HDGV			1
Program Type (1= Test only, 2= Test and repair) <sup>1</sup>			1
Inspection Frequency (1= Annual, 2= Biennial)			1
Compliance Rate (%)			96
<b>Stage II &amp; Onboard VRS Records:</b>	None	None	None

<sup>1</sup> PA97 ASM Test & Repair I/M Program is modeled as test only to claim 100% effectiveness.

# Philadelphia 5-County MOBILE Input Parameters

**TABLE 1e.**

	2003 Uncontrolled Baseline	2005 Adjusted Baseline	2005 Control Strategy
<b>SCENARIO DATA:</b>			
<b>Scenario Record:</b>			
Region (1= Low Altitude, 4= Low Altitude w/ LEV Program)	1	1	4
Calendar Year	05	05	05
Average Speed (* Varies; Calculated from Network by PPAQ)	*	*	*
Ambient Temperature (* Varies by Temperature and Time of Day)	*	*	*
Operating Mode Fractions			
Non-Catalyst, Cold Start	20.6	20.6	20.6
Catalyst, Hot Start	27.3	27.3	27.3
Catalyst, Cold Start	20.6	20.6	20.6
Month of Evaluation	7	7	7
<b>NLEV Program Parameter Record:</b>			
Start Year	None	None	99
I/M Program (1= Standard or No I/M Program; 2= "Maximum Benefit" I/M Program)			1
LDGT2 LEV Program (1= No NLEV program for LDGT2; 2 = NLEV Program for LDGT2)			1
<b>Local Area Parameter Record:</b>			
Scenario Name (* Generated by PPAQ)	*	*	*
Fuel Volatility Class	C	C	C
Minimum Daily Temperature	*	*	*
Maximum Daily Temperature (* Varies by County and Time of Day; See attached memo for handling of diurnal emissions by time of day)	*	*	*
Period 1 RVP (psi) (* Varies by County)	9.0	9.0	8.7
Period 2 RVP (psi) (* Varies by County)	9.0	9.0	8.7
Period 2 Start Year	20	20	20
Oxygenated Fuel Flag (1= No, 2= Yes)	1	1	1
Diesel Sales Fraction Flag (1= No, 2= Yes)	1	1	1
Reformulated Gasoline Flag (1= No, 2= Yes)	1	1	2
<b>Oxygenated Fuels Record:</b>			
	None	None	None
<b>Diesel Sales Fractions Record:</b>			
	None	None	None
<b>VMT Mix by Vehicle Type</b> (* Varies; Calculated from Network by PPAQ)			
	*	*	*
<b>Additional Correction Factor Record:</b>			
	None	None	None

## **Control Strategy Emissions Component Breakdown**

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Philadelphia 5-County Area  
Control Strategy Component Breakout

1999 Credit Breakout

Scenario	Bucks County				Chester County				Delaware County			
	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx
	(tpd)	Credit	(tpd)	Credit	(tpd)	(tpd)	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit
<b>1999</b>												
<b>Uncontrolled Baseline</b>	35.42		31.98		23.00		27.18		23.67		19.49	
PA97 ASM5015		-11.76		-6.48		-7.28		-5.04		-7.55		-3.86
RFG		-4.49		-0.10		-2.71		-0.08		-3.13		-0.06
FMVCP		-1.33		-2.88		-0.98		-2.72		-1.14		-1.99
NLEV		0.00		0.00		0.00		0.00		0.00		0.00
HDDE standard		0.00		0.00		0.00		0.00		0.00		0.00
<b>Control Strategy</b>	17.83	-17.58	22.52	-9.46	12.03	-10.97	19.33	-7.84	11.86	-11.81	13.58	-5.91

Scenario	Montgomery County				Philadelphia County				Philadelphia 5-County Total			
	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx
	(tpd)	Credit	(tpd)	Credit	(tpd)	(tpd)	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit
<b>1999</b>												
<b>Uncontrolled Baseline</b>	41.19		38.92		53.57		38.83		176.85		156.40	
PA97 ASM5015		-12.91		-7.33		-19.19		-9.51		-58.69		-32.22
RFG		-5.30		-0.13		-6.93		-0.09		-22.56		-0.47
FMVCP		-1.90		-4.04		-1.59		-2.48		-6.95		-14.11
NLEV		0.00		0.00		0.00		0.00		0.00		0.00
HDDE standard		0.00		0.00		0.00		0.00		0.00		0.00
<b>Control Strategy</b>	21.08	-20.11	27.42	-11.50	25.87	-27.71	26.75	-12.08	88.66	-88.19	109.60	-46.80

Philadelphia 5-County Area  
Control Strategy Component Breakout

2002 Credit Breakout

Scenario	Bucks County				Chester County				Delaware County			
	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx
	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit
<b>2002</b>												
<i>Uncontrolled Baseline</i>	36.61	-	32.34	-	24.01	-	27.88	-	24.40	-	19.70	-
PA97 ASM5015		-12.52		-6.64		-7.82		-5.25		-7.92		-3.95
RFG		-7.16		-1.48		-4.37		-1.28		-4.95		-0.92
FMVCP		-2.65		-4.67		-1.91		-4.39		-2.01		-3.05
NLEV		-0.19		-0.33		-0.15		-0.33		-0.19		-0.26
HDDE Standard		0.00		0.00		0.00		0.00		0.00		0.00
<b>Control Strategy</b>	14.08	-22.53	19.21	-13.12	9.76	-14.26	16.63	-11.25	9.33	-15.07	11.51	-8.19

Scenario	Montgomery County				Philadelphia County				Philadelphia 5-County Total			
	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx	VOC	VOC	NOx	NOx
	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit	(tpd)	Credit
<b>2002</b>												
<i>Uncontrolled Baseline</i>	42.02	-	39.13	-	53.29	-	38.26	-	180.33	-	157.30	-
PA97 ASM5015		-13.51		-7.48		-19.66		-9.40		-61.44		-32.73
RFG		-8.26		-1.84		-10.50		-1.65		-35.24		-7.17
FMVCP		-3.52		-6.22		-3.03		-4.26		-13.12		-22.59
NLEV		-0.28		-0.47		-0.19		-0.29		-1.01		-1.69
HDDE Standard		0.00		0.00		0.00		0.00		0.00		0.00
<b>Control Strategy</b>	16.45	-25.57	23.12	-16.01	19.91	-33.38	22.66	-15.60	69.52	-110.81	93.13	-64.17

Philadelphia 5-County Area  
Control Strategy Component Breakout

2005 Credit Breakout

Scenario	Bucks County				Chester County				Delaware County			
	VOC	VOC Credit	NOx	NOx Credit	VOC	VOC Credit	NOx	NOx Credit	VOC	VOC Credit	NOx	NOx Credit
	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)
<b>2005</b>												
<i>Uncontrolled Baseline</i>	38.45		33.09		25.64		28.95		25.62		20.17	
PA97 ASM5015		-13.62		-6.98		-8.68		-5.60		-8.57		-4.09
RFG		-7.51		-1.53		-4.66		-1.35		-5.20		-0.95
FMVCP		-4.19		-5.68		-3.01		-5.28		-3.02		-3.65
NLEV		-0.59		-0.95		-0.45		-0.93		-0.46		-0.66
HDDE Standard		0.00		-0.08		0.00		-0.08		0.00		-0.05
<i>Control Strategy</i>	12.53	-25.91	17.88	-15.21	8.84	-16.80	15.71	-13.25	8.37	-17.25	10.77	-9.40

Scenario	Montgomery County				Philadelphia County				Philadelphia 5-County Total			
	VOC	VOC Credit	NOx	NOx Credit	VOC	VOC Credit	NOx	NOx Credit	VOC	VOC Credit	NOx	NOx Credit
	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)	(tpd)
<b>2005</b>												
<i>Uncontrolled Baseline</i>	43.54		39.84		53.69		38.17		186.94		160.22	
PA97 ASM5015		-14.41		-7.79		-20.11		-9.43		-65.38		-33.89
RFG		-8.59		-1.91		-10.62		-1.71		-36.59		-7.45
FMVCP		-5.24		-7.36		-4.89		-5.39		-20.35		-27.36
NLEV		-0.79		-1.32		-0.56		-0.85		-2.85		-4.71
HDDE Standard		0.00		-0.10		0.00		-0.09		0.00		-0.38
<i>Control Strategy</i>	14.51	-29.03	21.36	-18.47	17.50	-36.18	20.70	-17.47	61.76	-125.18	86.42	-73.80

**VMT, VOC, CO and Nox Inventory and Forecast  
Emissions by County by Functional Class**

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**VT, VOC, and NOx INVENTORY AND FORECAST**  
**1999 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	1999 VMT speed	Growth from 1990	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)
<b>Bucks County</b>									
Rural									
2 Other Prin. Art	1,406,681 57.1	1,622,150 56.1	1.15	1,899	1,667	1,016 -39.1%	3,676	3,269	2,596 -20.6%
6 Minor Arterial	483,037 48.4	556,252 47.9	1.15	662	571	344 -39.7%	997	871	703 -19.3%
7 Major Collector	397,438 38.4	473,768 37.8	1.19	689	569	357 -37.3%	812	682	567 -17.0%
8 Minor Collector	482,045 37.1	574,604 35.8	1.19	881	713	456 -36.1%	990	832	692 -16.8%
9 Local	807,329 27.5	962,434 26.4	1.19	1,874	1,517	965 -36.4%	1,635	1,375	1,154 -16.1%
Subtotal (kg) (tons)	3,578,530 41.0	4,189,208 39.6	1.17	6,004 6.62	5,037 5.55	3,138 3.46 -37.7%	8,110 8.94	7,030 7.75	5,712 6.30 -18.7%
Small Urban									
12 Other Fwy/Ex	8,797 65.0	9,772 65.0	1.11	13	12	7 -39.7%	26	24	18 -22.8%
14 Prin. Arterial	260,079 57.1	230,404 56.3	1.15	267	235	143 -39.3%	508	451	354 -21.4%
16 Minor Arterial	10,764 31.1	12,393 31.0	1.15	21	18	11 -40.6%	20	18	14 -20.8%
17 Collector	32,617 26.2	38,885 26.0	1.19	76	63	39 -38.2%	65	54	45 -16.5%
19 Local	77,687 23.6	92,639 23.6	1.19	194	163	100 -38.8%	151	127	105 -16.9%
Subtotal (kg) (tons)	329,944 38.7	384,093 36.2	1.16	571 0.63	491 0.54	299 0.33 -39.0%	770 0.85	673 0.74	537 0.59 -20.2%
Urban									
11 Interstate	1,884,145 63.1	2,092,690 61.8	1.11	2,708	2,496	1,488 -41.2%	5,569	5,171	3,986 -22.9%
12 Other Fwy/Ex	764,982 63.9	849,646 63.8	1.11	1,121	1,011	609 -39.7%	2,289	2,066	1,612 -22.0%
14 Prin. Arterial	3,104,337 28.9	3,574,776 25.2	1.15	7,176	5,921	3,683 -37.8%	5,913	5,153	4,124 -20.0%
16 Minor Arterial	1,515,715 20.1	1,745,411 19.4	1.15	4,333	3,625	2,186 -39.7%	2,819	2,445	1,968 -19.5%
17 Collector	822,383 11.3	980,386 8.5	1.19	5,095	3,313	2,370 -28.5%	1,765	1,417	1,246 -12.1%
19 Local	850,012 9.9	1,013,275 8.4	1.19	5,120	3,737	2,425 -35.1%	1,781	1,458	1,246 -14.6%
Subtotal (kg) (tons)	8,941,574 22.8	10,256,183 19.9	1.15	25,553 28.17	20,104 22.16	12,740 14.04 -36.6%	20,135 22.19	17,710 19.52	14,183 15.63 -19.9%
Bucks County Totals (kg) (tons)	12,850,048 26.4	14,829,484 23.5	1.15	32,128 35.42	25,632 28.25	16,177 17.83 -36.9%	29,015 31.98	25,413 28.01	20,432 22.52 -19.6%
<b>Chester County</b>									
Rural									
1 Interstates	926,736 65.0	1,123,328 64.9	1.21	1,453	1,199	806 -32.7%	3,238	2,676	2,387 -10.8%
2 Other Prin. Art	1,462,882 55.9	1,798,559 54.0	1.23	1,973	1,610	1,065 -33.8%	3,742	3,195	2,684 -16.0%

**VT, VOC, and NOx INVENTORY AND FORECAST**  
**1999 Emissions by County by Functional Class**

	VT			VOC (kg)			NOx (kg)		
	1990 VT speed	1999 VT speed	Growth from 1990	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)
6 Minor Arterial	679,547 48.2	835,472 47.3	1.23	943	755	498 -34.1%	1,424	1,164	1,008 -13.4%
7 Major Collector	856,201 38.9	1,129,645 38.2	1.32	1,534	1,141	807 -29.3%	1,851	1,404	1,297 -7.6%
8 Minor Collector	337,552 39.4	445,377 39.1	1.32	595	449	314 -30.1%	746	565	528 -6.6%
9 Local	1,053,074 28.6	1,389,373 28.2	1.32	2,421	1,816	1,266 -30.3%	2,274	1,723	1,613 -6.4%
Subtotal (kg) (tons)	5,315,982 43.6	6,721,754 42.4	1.28	8,919 9.83	8,970 7.68	4,756 5.24 -31.8%	13,274 14.63	10,727 11.82	9,517 10.49 -11.3%
Small Urban									
12 Other Fwy/Ex	44,995 65.0	54,540 65.0	1.21	69	57	38 -32.9%	144	119	102 -13.8%
14 Prin. Arterial	43,911 58.7	53,986 58.1	1.23	61	50	34 -33.6%	125	103	89 -13.3%
16 Minor Arterial	1,376 30.9	1,693 30.7	1.23	3	2	1 -36.0%	3	2	2 -10.3%
Subtotal (kg) (tons)	90,282 60.8	110,219 80.4	1.22	133 0.15	109 0.12	73 0.08 -33.3%	271 0.30	224 0.25	194 0.21 -13.5%
Urban									
11 Interstate	30,098 65.0	36,484 64.9	1.21	47	39	26 -32.9%	105	87	77 -10.9%
12 Other Fwy/Ex	1,923,471 62.4	2,331,538 59.8	1.21	2,696	2,312	1,472 -36.3%	5,424	4,728	3,834 -18.9%
14 Prin. Arterial	1,327,721 28.5	1,632,374 27.0	1.23	2,930	2,282	1,528 -33.1%	2,580	2,110	1,809 -14.3%
16 Minor Arterial	512,296 20.8	629,845 19.8	1.23	1,442	1,121	738 -34.2%	963	784	672 -14.3%
17 Collector	493,058 15.3	650,511 13.8	1.32	2,112	1,462	1,054 -27.9%	1,031	771	725 -5.9%
19 Local	454,946 10.8	600,249 9.5	1.32	2,591	1,768	1,267 -29.2%	1,006	748	711 -5.0%
Subtotal (kg) (tons)	4,741,590 26.8	5,881,001 24.3	1.24	11,818 13.03	9,004 9.93	6,085 6.71 -32.4%	11,109 12.24	9,228 10.17	7,828 8.63 -15.2%
Chester County Totals (kg) (tons)	10,147,864 33.8	12,712,974 31.6	1.25	20,870 23.00	16,063 17.73	10,914 12.03 -32.1%	24,654 27.18	20,179 22.24	17,539 19.33 -13.1%
Delaware County									
Rural									
2 Other Prin. Art	331,091 55.7	359,601 55.0	1.09	399	367	211 -42.6%	770	722	543 -24.8%
6 Minor Arterial	56,202 45.3	61,042 44.6	1.09	73	66	37 -43.6%	98	91	67 -26.6%
7 Major Collector	79,320 38.5	96,986 39.3	1.22	130	106	87 -36.6%	162	133	113 -15.2%
8 Minor Collector	20,773 39.5	25,395 39.4	1.22	34	28	18 -36.7%	44	36	31 -13.8%
9 Local	123,337 28.8	150,785 28.6	1.22	262	213	134 -37.1%	246	201	171 -15.4%
Subtotal (kg) (tons)	610,723 43.6	693,809 42.6	1.14	898 0.99	780 0.86	466 0.51 -40.2%	1,320 1.46	1,183 1.30	924 1.02 -21.9%

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**1999 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	1999 VMT speed	Growth from 1990	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)
<b>Urban</b>									
11 Interstate	1,081,394 63.8	1,998,025 44.6	1.85	2,635	1,376	1,365 -0.8%	4,038	2,965	2,896 -2.3%
12 Other Fwy/Ex	184,803 63.9	341,448 60.8	1.85	405	230	218 -5.2%	805	466	554 18.8%
14 Prin. Arterial	3,915,467 27.2	4,262,620 26.4	1.09	7,853	7,073	3,998 -43.5%	6,795	6,276	4,678 -25.5%
16 Minor Arterial	913,314 20.7	991,859 20.3	1.09	2,255	2,029	1,130 -44.3%	1,545	1,420	1,065 -25.0%
17 Collector	839,013 14.4	1,025,847 13.1	1.22	3,529	2,652	1,715 -35.3%	1,658	1,341	1,147 -14.5%
19 Local	734,330 10.6	897,839 9.6	1.22	3,899	2,950	1,864 -36.8%	1,522	1,228	1,059 -13.7%
Subtotal (kg) (tons)	7,668,321 22.9	9,507,738 22.0	1.24	20,575 22.68	16,310 17.98	10,289 11.34 -36.9%	16,363 18.04	13,696 15.10	11,399 12.57 -16.8%
<b>Delaware County</b>									
Totals (kg) (tons)	8,279,044 23.7	10,201,547 22.7	1.23	21,473 23.67	17,089 18.84	10,755 11.86 -37.1%	17,683 19.49	14,879 16.40	12,323 13.58 -17.2%
<b>Montgomery County</b>									
<b>Rural</b>									
2 Other Prin. Art	1,971,971 55.7	2,234,181 54.6	1.13	2,425	2,141	1,297 -39.4%	4,602	4,179	3,245 -22.4%
6 Minor Arterial	380,419 47.9	431,005 47.3	1.13	484	423	253 -40.2%	723	640	507 -20.8%
7 Major Collector	255,182 38.1	300,644 37.5	1.18	414	347	216 -37.8%	490	418	343 -18.1%
8 Minor Collector	182,382 38.7	214,883 38.0	1.18	295	246	154 -37.4%	363	308	257 -16.8%
9 Local	657,835 28.9	775,020 28.8	1.18	1,325	1,120	689 -38.5%	1,267	1,076	895 -16.9%
Subtotal (kg) (tons)	3,447,789 44.5	3,955,733 43.7	1.15	4,942 5.45	4,277 4.71	2,609 2.88 -39.0%	7,445 8.21	6,622 7.30	5,245 5.78 -20.8%
<b>Small Urban</b>									
12 Other Fwy/Ex	68,563 65.0	84,792 65.0	1.24	107	86	59 -32.0%	224	181	158 -12.5%
14 Prin. Arterial	204,536 58.5	231,730 58.0	1.13	257	228	139 -39.2%	503	449	350 -22.1%
16 Minor Arterial	72,000 30.8	81,568 30.6	1.13	132	116	69 -40.7%	130	115	90 -21.3%
17 Collector	65,339 26.0	76,983 25.8	1.18	142	120	73 -38.8%	121	102	83 -18.4%
19 Local	108,487 23.6	127,816 23.5	1.18	253	214	130 -39.2%	198	168	138 -18.0%
Subtotal (kg) (tons)	518,925 37.1	602,889 36.8	1.16	891 0.98	765 0.84	470 0.52 -38.5%	1,176 1.30	1,016 1.12	820 0.90 -19.3%
<b>Urban</b>									
11 Interstate	2,719,850 60.8	3,363,807 53.0	1.24	3,956	3,249	2,113 -34.9%	7,378	6,849	5,309 -22.5%
12 Other Fwy/Ex	999,388 61.5	1,235,938 57.4	1.24	1,397	1,182	756 -36.0%	2,695	2,382	1,884 -20.9%
14 Prin. Arterial	4,177,372	4,732,841	1.13	8,394	7,193	4,334	7,368	6,533	5,091

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**1999 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	1999 VMT speed	Growth from 1990	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)	1999 Baseline	1999 Adjusted Baseline	1999 Control Strategy (from '99 AdjBase)
	28.2	27.2				-39.8%			-22.1%
16 Minor Arterial	2,234,060 20.3	2,531,120 19.5	1.13	5,900	4,998	2,985 -40.3%	3,872	3,421	2,708 -20.8%
17 Collector	1,520,523 14.3	1,791,430 13.2	1.18	6,043	4,789	2,985 -37.7%	2,885	2,411	2,014 -18.5%
19 Local	1,222,062 10.9	1,439,776 10.4	1.18	5,843	4,759	2,871 -39.7%	2,506	2,110	1,801 -14.6%
Subtotal (kg) (tons)	12,873,255 24.0	15,094,712 22.8	1.17	31,533 34.76	26,170 28.85	16,043 17.68 -38.7%	26,684 29.41	23,706 26.13	18,807 20.73 -20.7%
Montgomery County Totals (kg) (tons)	16,839,968 26.8	19,653,334 25.5	1.17	37,367 41.19	31,212 34.41	19,123 21.08 -38.7%	35,305 38.92	31,343 34.55	24,872 27.42 -20.6%
<b>Philadelphia County</b>									
Urban									
11 Interstate	4,230,651 53.7	4,566,899 48.5	1.08	6,856	6,028	3,436 -43.0%	11,055	10,943	7,795 -28.8%
12 Other Fwy/Ex	409,025 60.7	441,533 59.2	1.08	627	590	321 -45.6%	1,190	1,138	804 -29.3%
14 Prin. Arterial	6,332,080 21.7	6,586,634 20.7	1.04	17,848	16,343	8,590 -47.4%	12,127	11,654	8,259 -29.1%
16 Minor Arterial	2,726,627 14.8	2,836,268 14.1	1.04	10,692	9,860	5,112 -48.2%	5,274	5,050	3,598 -28.8%
17 Collector	1,217,717 14.7	1,276,257 14.5	1.05	4,667	4,381	2,252 -48.8%	2,369	2,257	1,615 -28.5%
19 Local	1,569,364 10.3	1,644,773 10.1	1.05	7,913	7,455	3,754 -49.7%	3,213	3,058	2,195 -28.2%
Subtotal (kg) (tons)	16,485,464 20.7	17,352,364 19.9	1.05	48,603 53.57	44,657 49.23	23,465 25.87 -47.5%	35,228 38.83	34,100 37.59	24,265 26.75 -28.8%
Philadelphia County Totals (kg) (tons)	16,485,464 20.7	17,352,364 19.9	1.05	48,603 53.57	44,657 49.23	23,465 25.87 -47.5%	35,228 38.83	34,100 37.59	24,265 26.75 -28.8%
<b>Philadelphia 5-County Area</b>									
Totals (kg) (tons)	64,602,388 25.2	74,749,696 23.9	1.16	160,441 176.85	134,674 148.45	80,435 88.66 -40.3%	141,885 156.40	125,914 138.80	99,431 109.60 -21.0%

**VT, VOC, and NOx INVENTORY AND FORECAST**  
**2002 Emissions by County by Functional Class**

VT				VOC (kg)			NOx (kg)		
	1990 VMT speed	2002 VMT speed	Growth from 1990	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy  (from '02 AdjBase)	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy  (from '02 AdjBase)
<b>Bucks County</b>									
Rural									
2 Other Prin. Art	1,408,681 57.1	1,677,990 55.9	1.19	1,876	1,595	822 -48.5%	3,675	3,173	2,350 -25.9%
6 Minor Arterial	483,037 48.4	575,379 47.8	1.19	658	548	280 -48.9%	1,008	854	643 -24.7%
7 Major Collector	397,438 38.4	492,947 37.6	1.24	696	552	288 -47.9%	832	671	524 -22.0%
8 Minor Collector	482,045 37.1	597,838 35.2	1.24	900	692	368 -48.8%	1,009	817	640 -21.8%
9 Local	807,329 27.5	1,001,132 26.0	1.24	1,920	1,478	773 -47.7%	1,671	1,353	1,064 -21.4%
Subtotal (kg) (tons)	3,578,530 41.0	4,345,286 39.3	1.21	6,049 6.67	4,864 5.36	2,531 2.79 -48.0%	8,195 9.03	6,868 7.57	5,220 5.75 -24.0%
Small Urban									
12 Other Fwy/Ex	8,797 65.0	10,094 65.0	1.15	13	11	6 -48.2%	26	23	16 -27.9%
14 Prin. Arterial	200,079 57.1	238,331 56.0	1.19	265	225	118 -48.3%	510	439	321 -26.8%
16 Minor Arterial	10,784 31.1	12,821 30.9	1.19	21	18	9 -51.8%	21	17	13 -26.2%
17 Collector	32,617 26.2	40,450 25.9	1.24	77	62	31 -49.6%	67	54	42 -21.9%
19 Local	77,887 23.6	96,337 23.6	1.24	197	159	79 -50.5%	155	125	97 -22.2%
Subtotal (kg) (tons)	329,944 38.7	398,033 38.0	1.21	573 0.63	474 0.52	240 0.26 -49.4%	778 0.86	658 0.72	490 0.54 -25.5%
Urban									
11 Interstate	1,884,145 63.1	2,162,036 61.2	1.15	2,626	2,358	1,179 -50.0%	5,508	4,996	3,563 -28.7%
12 Other Fwy/Ex	764,882 63.9	877,817 63.8	1.15	1,094	955	492 -48.5%	2,285	1,998	1,463 -26.8%
14 Prin. Arterial	3,104,337 26.9	3,697,835 24.8	1.19	7,342	5,773	2,944 -49.0%	6,010	5,074	3,789 -25.3%
16 Minor Arterial	1,515,715 20.1	1,805,487 19.2	1.19	4,453	3,552	1,729 -51.3%	2,878	2,412	1,813 -24.8%
17 Collector	822,383 11.3	1,020,000 7.9	1.24	5,583	3,246	1,825 -43.8%	1,832	1,396	1,172 -16.1%
19 Local	850,012 9.9	1,054,229 8.0	1.24	5,490	3,659	1,835 -49.8%	1,848	1,443	1,170 -18.9%
Subtotal (kg) (tons)	8,941,574 22.8	10,617,404 19.1	1.19	26,587 29.31	19,543 21.54	10,003 11.03 -48.8%	20,361 22.44	17,318 19.09	12,971 14.30 -25.1%
Bucks County Totals (kg) (tons)	12,850,048 26.4	15,360,723 22.7	1.20	33,209 36.61	24,881 27.43	12,774 14.08 -48.7%	29,335 32.34	24,844 27.39	18,681 20.59 -24.8%
							w/ Phase II NOx Credit		
<b>Chester County</b>									
Rural									
1 Interstates	926,736 65.0	1,178,520 64.9	1.27	1,441	1,135	662 -41.7%	3,267	2,575	2,182 -15.3%
2 Other Prin. Art	1,462,882	1,908,091	1.30	2,021	1,542	889	3,801	3,106	2,454

**VT, VOC, and NOx INVENTORY AND FORECAST**  
**2002 Emissions by County by Functional Class**

	VT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2002 VMT speed	Growth from 1990	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy (from '02 AdjBase)	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy (from '02 AdjBase)
	55.9	53.4				-42.4%			-21.0%
6 Minor Arterial	679,547 48.2	886,370 46.9	1.30	974	728	416 -42.6%	1,478	1,142	942 -17.5%
7 Major Collector	856,201 38.9	1,201,113 37.9	1.40	1,592	1,111	684 -40.2%	1,932	1,381	1,218 -11.8%
8 Minor Collector	337,552 39.4	473,510 39.1	1.40	615	435	257 -40.9%	778	555	496 -10.7%
9 Local	1,053,074 28.6	1,477,058 28.1	1.40	2,525	1,771	1,029 -41.9%	2,376	1,694	1,515 -10.6%
Subtotal (kg) (tons)	5,315,992 43.6	7,124,662 42.1	1.34	9,168 10.11	6,722 7.41	3,917 4.32 -41.7%	13,633 15.03	10,454 11.52	8,806 9.71 -15.8%
Small Urban									
12 Other Fwy/Ex	44,995 65.0	57,219 65.0	1.27	68	54	31 -41.7%	146	115	94 -18.4%
14 Prin. Arterial	43,911 58.7	57,274 57.9	1.30	62	48	28 -42.1%	128	100	83 -17.2%
16 Minor Arterial	1,376 30.9	1,796 30.5	1.31	3	2	1 -47.2%	3	2	2 -17.8%
Subtotal (kg) (tons)	90,282 60.8	116,289 60.3	1.29	133 0.15	104 0.11	60 0.07 -42.0%	277 0.31	217 0.24	179 0.20 -17.9%
Urban									
11 Interstate	30,098 65.0	38,276 64.9	1.27	47	37	21 -41.6%	106	83	70 -15.4%
12 Other Fwy/Ex	1,923,471 62.4	2,446,074 58.8	1.27	2,685	2,202	1,205 -45.3%	5,416	4,590	3,445 -25.0%
14 Prin. Arterial	1,327,721 28.5	1,731,796 28.4	1.30	3,095	2,230	1,249 -44.0%	2,696	2,080	1,694 -18.5%
16 Minor Arterial	512,298 20.8	668,207 19.5	1.30	1,541	1,101	601 -45.4%	1,009	774	634 -18.0%
17 Collector	493,058 15.3	691,681 13.3	1.40	2,289	1,437	820 -42.9%	1,087	762	687 -9.9%
19 Local	454,946 10.8	638,207 8.9	1.40	2,828	1,755	976 -44.4%	1,065	738	678 -8.2%
Subtotal (kg) (tons)	4,741,590 28.8	6,214,241 23.4	1.31	12,484 13.76	8,761 9.66	4,872 5.37 -44.4%	11,378 12.54	9,028 9.95	7,208 7.95 -20.2%
Chester County Totals (kg) (tons)	10,147,864 33.8	13,455,192 30.8	1.33	21,785 24.01	15,587 17.18	8,850 9.78 -43.2%	25,288 27.88	19,699 21.71	16,193 17.85 -17.8%
							w/ Phase II NOx Credit		16.63 -23.4%
Delaware County									
Rural									
2 Other Prin. Art	331,081 55.7	371,903 54.7	1.12	396	353	172 -51.2%	769	702	489 -30.3%
6 Minor Arterial	56,202 45.3	63,132 44.2	1.12	73	64	30 -52.3%	100	89	61 -31.7%
7 Major Collector	79,320 39.5	100,658 39.2	1.27	131	103	54 -47.3%	165	130	103 -20.7%
8 Minor Collector	20,773 39.5	26,364 39.4	1.27	35	27	14 -47.5%	45	35	28 -19.3%
9 Local	123,337 28.8	156,532 28.6	1.27	265	208	107 -48.8%	251	198	157 -20.6%

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**2002 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2002 VMT speed	Growth from 1990	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy (from '02 AdjBase)	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy (from '02 AdjBase)
Subtotal (kg)	610,723	718,589	1.18	900	755	378	1,329	1,154	839
(tons)	43.6	42.4		0.99	0.83	0.42	1.47	1.27	0.92
						-49.9%			-27.3%
Urban									
11 Interstate	1,081,394	2,071,970	1.92	2,754	1,303	1,145	4,003	2,854	2,592
	63.8	42.0				-12.2%			-9.2%
12 Other Fwy/Ex	184,803	354,087	1.92	397	219	176	799	451	496
	63.9	60.1				-19.5%			10.0%
14 Prin. Arterial	3,915,467	4,398,085	1.12	8,035	6,917	3,188	6,908	6,174	4,287
	27.2	26.0				-53.9%			-30.6%
16 Minor Arterial	913,314	1,025,894	1.12	2,315	1,995	899	1,573	1,398	980
	20.7	20.1				-54.9%			-29.9%
17 Collector	839,013	1,064,749	1.27	3,677	2,608	1,292	1,700	1,321	1,065
	14.4	12.7				-50.5%			-19.3%
19 Local	734,330	931,897	1.27	4,054	2,894	1,385	1,562	1,207	981
	10.6	9.3				-52.1%			-18.7%
Subtotal (kg)	7,668,321	9,846,682	1.28	21,232	15,935	8,084	16,545	13,405	10,402
(tons)	22.9	21.4		23.40	17.57	8.91	18.24	14.78	11.47
						-49.3%			-22.4%
Delaware County									
Totals (kg)	8,279,044	10,565,271	1.28	22,132	16,690	8,462	17,875	14,580	11,241
(tons)	23.7	22.2		24.40	18.40	9.33	19.70	16.05	12.39
						-49.3%			-22.8%
							w/ Phase II NOx Credit		
									11.51
									-28.3%
Montgomery County									
Rural									
2 Other Prin. Art	1,971,971	2,306,353	1.17	2,411	2,065	1,060	4,598	4,066	2,928
	55.7	54.3				-48.7%			-28.0%
6 Minor Arterial	380,419	444,927	1.17	486	408	206	732	629	462
	47.9	47.1				-49.7%			-26.7%
7 Major Collector	255,182	312,025	1.22	419	337	173	501	410	315
	38.1	37.4				-48.6%			-23.2%
8 Minor Collector	182,382	222,995	1.22	299	240	124	368	302	235
	38.7	37.9				-48.3%			-22.2%
9 Local	657,835	804,180	1.22	1,346	1,097	547	1,292	1,058	823
	28.9	28.7				-50.2%			-22.3%
Subtotal (kg)	3,447,789	4,090,480	1.19	4,961	4,147	2,109	7,491	6,466	4,762
(tons)	44.5	43.4		5.47	4.57	2.32	8.26	7.13	5.25
						-49.2%			-26.3%
Small Urban									
12 Other Fwy/Ex	68,563	87,138	1.27	104	82	48	222	175	142
	65.0	65.0				-41.8%			-18.7%
14 Prin. Arterial	204,536	239,216	1.17	255	220	113	505	438	317
	58.5	57.9				-48.7%			-27.6%
16 Minor Arterial	72,000	84,207	1.17	134	113	54	132	113	83
	30.8	30.5				-52.3%			-26.9%
17 Collector	65,339	79,889	1.22	145	118	58	123	101	77
	26.0	25.7				-50.7%			-23.7%
19 Local	108,487	132,702	1.22	258	210	103	203	166	127
	23.6	23.5				-51.1%			-23.4%
Subtotal (kg)	518,925	623,152	1.20	896	744	376	1,187	993	746
(tons)	37.1	36.7		0.99	0.82	0.41	1.31	1.09	0.82
						-49.5%			-24.8%
Urban									
11 Interstate	2,719,850	3,456,658	1.27	3,958	3,109	1,710	7,218	6,615	4,701

**VTM, VOC, and NOx INVENTORY AND FORECAST**  
**2002 Emissions by County by Functional Class**

VMT				VOC (kg)			NOx (kg)		
	1990 VMT speed	2002 VMT speed	Growth from 1990	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy  (from '02 AdjBase)	2002 Baseline	2002 Adjusted Baseline	2002 Control Strategy  (from '02 AdjBase)
	60.8	51.8				-45.0%			-28.9%
12 Other Fwy/Ex	999,388 61.5	1,270,120 56.5	1.27	1,379	1,128	608 -46.3%	2,651	2,314	1,666 -28.0%
14 Prin. Arterial	4,177,372 28.2	4,885,737 27.0	1.17	8,545	7,057	3,420 -51.5%	7,498	6,438	4,665 -27.5%
16 Minor Arterial	2,234,060 20.3	2,612,873 19.3	1.17	6,086	4,921	2,354 -52.2%	3,954	3,383	2,486 -26.5%
17 Collector	1,520,523 14.3	1,859,262 12.9	1.22	6,273	4,714	2,229 -52.7%	2,940	2,377	1,861 -21.7%
19 Local	1,222,062 10.9	1,494,269 10.2	1.22	6,025	4,674	2,119 -54.7%	2,560	2,069	1,660 -19.8%
Subtotal (kg) (tons)	12,873,255 24.0	15,578,919 22.4	1.21	32,266 35.57	25,603 28.22	12,438 13.71 -51.4%	26,820 29.56	23,196 25.57	17,038 18.78 -26.5%
Montgomery County Totals (kg) (tons)	16,839,968 26.8	20,292,552 25.1	1.21	38,123 42.02	30,494 33.61	14,923 16.45 -51.1%	35,498 39.13	30,654 33.79	22,546 24.85 -26.5%
							w/ Phase II NOx Credit		23.12 -31.6%
Philadelphia County									
Urban									
11 Interstate	4,230,651 53.7	4,632,311 47.6	1.09	6,736	5,739	2,782 -51.5%	10,745	10,536	6,954 -34.0%
12 Other Fwy/Ex	409,025 60.7	447,855 58.9	1.09	601	557	257 -53.8%	1,152	1,094	718 -34.4%
14 Prin. Arterial	6,332,080 21.7	6,651,078 20.5	1.05	17,845	16,039	6,745 -57.9%	12,023	11,430	7,494 -34.4%
16 Minor Arterial	2,726,627 14.8	2,863,979 14.0	1.05	10,670	9,665	3,830 -60.4%	5,237	4,959	3,282 -33.8%
17 Collector	1,217,717 14.7	1,292,459 14.4	1.06	4,648	4,294	1,693 -60.6%	2,357	2,216	1,472 -33.6%
19 Local	1,569,364 10.3	1,665,681 10.1	1.06	7,841	7,267	2,752 -62.1%	3,196	2,997	2,011 -32.9%
Subtotal (kg) (tons)	16,485,464 20.7	17,553,364 19.7	1.06	48,341 53.29	43,561 48.02	18,059 19.91 -58.5%	34,710 38.26	33,233 36.63	21,932 24.18 -34.0%
Philadelphia County Totals (kg) (tons)	16,485,464 20.7	17,553,364 19.7	1.06	48,341 53.29	43,561 48.02	18,059 19.91 -58.5%	34,710 38.26	33,233 36.63	21,932 24.18 -34.0%
							w/ Phase II NOx Credit		22.66 -38.2%
Philadelphia 5-County Area									
Totals (kg) (tons)	64,602,388 25.2	77,227,104 23.5	1.20	163,591 180.33	131,213 144.64	63,068 69.52 -51.9%	142,705 157.30	122,989 135.57	90,593 99.86 -26.3%
							w/ Phase II NOx Credit		93.13 -31.3%



**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**2005 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2005 VMT speed	Growth from 1990	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)
<b>Bucks County</b>									
Rural									
2 Other Prin. Art	1,408,681 57.1	1,733,864 55.6	1.23	1,892	1,559	727 -53.4%	3,730	3,138	2,188 -30.3%
6 Minor Arterial	483,037 48.4	594,549 47.7	1.23	672	538	247 -54.1%	1,036	850	604 -29.0%
7 Major Collector	397,438 38.4	512,074 37.4	1.29	717	544	256 -53.0%	860	668	497 -25.7%
8 Minor Collector	482,045 37.1	621,066 34.7	1.29	930	682	327 -52.0%	1,043	814	606 -25.5%
9 Local	807,329 27.5	1,040,176 26.7	1.29	1,993	1,459	689 -52.8%	1,725	1,347	1,008 -25.2%
Subtotal (kg) (tons)	3,578,530 41.0	4,501,729 38.9	1.26	6,204 6.84	4,782 5.27	2,248 2.48 -53.0%	8,394 9.25	6,817 7.51	4,903 5.40 -28.1%
Small Urban									
12 Other Fwy/Ex	8,797 65.0	10,418 65.0	1.18	13	11	5 -52.8%	27	23	15 -31.8%
14 Prin. Arterial	200,079 57.1	246,267 55.8	1.23	267	220	102 -53.6%	518	435	299 -31.1%
16 Minor Arterial	10,764 31.1	13,246 30.9	1.23	22	17	7 -57.1%	21	17	12 -30.2%
17 Collector	32,617 26.2	42,025 25.9	1.29	80	61	27 -55.1%	69	53	40 -25.8%
19 Local	77,687 23.6	100,069 23.6	1.29	203	157	70 -55.7%	160	124	92 -25.6%
Subtotal (kg) (tons)	329,944 38.7	412,025 37.9	1.25	584 0.64	467 0.51	212 0.23 -54.6%	795 0.88	652 0.72	459 0.51 -29.6%
Urban									
11 Interstate	1,884,145 63.1	2,231,388 60.5	1.18	2,623	2,298	1,032 -55.1%	5,519	4,918	3,271 -33.5%
12 Other Fwy/Ex	764,982 63.9	905,970 63.7	1.18	1,100	931	435 -53.3%	2,322	1,971	1,362 -30.9%
14 Prin. Arterial	3,104,337 28.9	3,820,914 24.3	1.23	7,640	5,713	2,616 -54.2%	6,185	5,058	3,576 -29.3%
16 Minor Arterial	1,515,715 20.1	1,865,584 19.0	1.23	4,616	3,519	1,530 -56.5%	2,961	2,401	1,715 -28.6%
17 Collector	822,383 11.3	1,059,580 7.2	1.29	6,215	3,206	1,668 -48.0%	1,917	1,388	1,122 -19.2%
19 Local	850,012 9.9	1,095,163 7.6	1.29	5,899	3,613	1,632 -54.8%	1,926	1,431	1,117 -21.9%
Subtotal (kg) (tons)	8,941,574 22.8	10,978,599 18.4	1.23	28,092 30.97	19,281 21.25	8,913 9.82 -53.8%	20,830 22.96	17,167 18.92	12,163 13.41 -29.1%
Bucks County Totals (kg) (tons)	12,850,048 26.4	15,892,353 22.0	1.24	34,880 38.45	24,531 27.04	11,371 12.53 -53.6%	30,019 33.09	24,636 27.16	17,525 19.32 -28.9%
							w/ Phase II NOx Credit		
									17.88 -34.2%
<b>Chester County</b>									
Rural									
1 Interstates	926,736 65.0	1,235,734 64.9	1.33	1,482	1,113	594 -48.6%	3,369	2,530	2,050 -19.0%
2 Other Prin. Art	1,462,882	2,017,628	1.38	2,117	1,531	806	3,919	3,076	2,311

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**2005 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2005 VMT speed	Growth from 1990	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)
	55.9	52.7				-47.3%			-24.9%
6 Minor Arterial	679,547 48.2	937,261 48.6	1.38	1,029	723	380 -47.5%	1,556	1,138	904 -20.5%
7 Major Collector	856,201 38.9	1,272,600 37.7	1.49	1,687	1,101	601 -45.4%	2,041	1,377	1,178 -14.5%
8 Minor Collector	337,562 39.4	501,709 39.0	1.49	648	431	233 -45.9%	822	553	478 -13.6%
9 Local	1,053,074 28.6	1,565,162 27.9	1.49	2,663	1,758	929 -47.2%	2,503	1,689	1,461 -13.5%
Subtotal (kg) (tons)	5,315,992 43.6	7,530,094 41.8	1.42	9,626 10.61	6,658 7.34	3,543 3.91 -46.8%	14,210 15.66	10,364 11.42	8,382 9.24 -19.1%
Small Urban									
12 Other Fwy/Ex	44,895 65.0	59,998 65.0	1.33	71	53	28 -46.9%	152	114	89 -21.8%
14 Prin. Arterial	43,911 58.7	60,565 57.6	1.38	65	48	25 -47.3%	133	99	78 -20.7%
16 Minor Arterial	1,376 30.9	1,899 30.4	1.38	3	2	1 -52.1%	3	2	2 -19.6%
Subtotal (kg) (tons)	90,282 60.8	122,462 60.1	1.36	138 0.15	103 0.11	54 0.06 -47.2%	287 0.32	215 0.24	169 0.19 -21.2%
Urban									
11 Interstate	30,098 65.0	40,135 64.9	1.33	48	36	19 -46.8%	109	82	66 -19.3%
12 Other Fwy/Ex	1,923,471 62.4	2,564,818 57.5	1.33	2,780	2,171	1,069 -50.8%	5,474	4,545	3,190 -29.8%
14 Prin. Arterial	1,327,721 28.5	1,831,219 25.9	1.38	3,309	2,212	1,138 -48.5%	2,839	2,071	1,637 -20.9%
16 Minor Arterial	512,296 20.8	706,578 19.0	1.38	1,669	1,095	549 -49.9%	1,062	770	612 -20.5%
17 Collector	493,058 15.3	732,860 12.7	1.49	2,487	1,426	741 -48.0%	1,150	759	667 -12.1%
19 Local	454,946 10.8	676,194 8.3	1.49	3,222	1,738	904 -48.0%	1,136	734	661 -9.9%
Subtotal (kg) (tons)	4,741,690 26.8	6,551,804 22.4	1.38	13,495 14.88	8,678 9.57	4,420 4.87 -49.1%	11,770 12.97	8,960 9.88	6,833 7.53 -23.7%
Chester County Totals (kg) (tons)	10,147,864 33.8	14,204,360 29.9	1.40	23,259 25.64	15,438 17.02	8,017 8.84 -48.1%	26,267 28.95	19,538 21.54	15,384 16.96 -21.3%
							w/ Phase II NOx Credit		15.71 -27.1%
Delaware County									
Rural									
2 Other Prin. Art	331,091 55.7	384,199 54.4	1.16	405	348	155 -55.6%	778	693	455 -34.4%
6 Minor Arterial	56,202 45.3	65,219 43.9	1.16	76	63	27 -57.4%	103	89	58 -35.1%
7 Major Collector	79,320 39.5	104,334 39.1	1.32	136	102	48 -52.8%	170	130	98 -24.4%
8 Minor Collector	20,773 39.5	27,326 39.3	1.32	36	27	13 -52.6%	46	35	27 -23.2%
9 Local	123,337 28.8	162,241 28.6	1.32	273	207	95 -54.1%	259	197	149 -24.2%

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**2005 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2005 VMT speed	Growth from 1990	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)
<b>Subtotal (kg)</b>	<b>610,723</b>	<b>743,319</b>	<b>1.22</b>	<b>925</b>	<b>747</b>	<b>337</b>	<b>1,355</b>	<b>1,143</b>	<b>786</b>
<b>(tons)</b>	<b>43.6</b>	<b>42.3</b>		<b>1.02</b>	<b>0.82</b>	<b>0.37</b>	<b>1.49</b>	<b>1.26</b>	<b>0.87</b>
						<b>-54.9%</b>			<b>-31.2%</b>
<b>Urban</b>									
11 Interstate	1,081,394	2,145,931	1.98	2,979	1,279	1,064	4,059	2,804	2,417
	63.8	39.3				-16.8%			-13.8%
12 Other Fwy/Ex	184,803	366,728	1.98	404	215	157	802	446	458
	63.9	59.2				-27.0%			2.8%
14 Prin. Arterial	3,915,467	4,543,515	1.16	8,373	6,865	2,853	7,097	6,148	4,054
	27.2	25.6				-58.4%			-34.1%
16 Minor Arterial	913,314	1,059,806	1.16	2,408	1,986	804	1,613	1,390	925
	20.7	19.9				-59.5%			-33.5%
17 Collector	839,013	1,103,620	1.32	3,863	2,594	1,152	1,758	1,309	1,011
	14.4	12.3				-55.6%			-22.8%
19 Local	734,330	965,908	1.32	4,272	2,872	1,229	1,614	1,198	933
	10.6	9.0				-57.2%			-22.1%
<b>Subtotal (kg)</b>	<b>7,668,321</b>	<b>10,185,508</b>	<b>1.33</b>	<b>22,320</b>	<b>15,812</b>	<b>7,259</b>	<b>16,943</b>	<b>13,294</b>	<b>9,798</b>
<b>(tons)</b>	<b>22.9</b>	<b>20.9</b>		<b>24.60</b>	<b>17.43</b>	<b>8.00</b>	<b>18.88</b>	<b>14.65</b>	<b>10.80</b>
						<b>-54.1%</b>			<b>-26.3%</b>
<b>Delaware County</b>									
Totals (kg)	8,279,044	10,928,827	1.32	23,245	16,560	7,596	18,299	14,438	10,584
(tons)	23.7	21.6		25.62	18.25	8.37	20.17	15.91	11.67
						<b>-54.1%</b>			<b>-26.7%</b>
							<b>w/ Phase II NOx Credit</b>		<b>10.77</b>
									<b>-32.3%</b>
<b>Montgomery County</b>									
<b>Rural</b>									
2 Other Prin. Art	1,971,971	2,378,546	1.21	2,460	2,036	937	4,662	4,026	2,713
	55.7	54.0				-54.0%			-32.6%
6 Minor Arterial	380,419	458,849	1.21	497	404	182	753	625	433
	47.9	46.9				-54.9%			-30.7%
7 Major Collector	255,182	323,410	1.27	432	334	153	517	409	298
	38.1	37.2				-54.3%			-27.1%
8 Minor Collector	182,382	231,158	1.27	308	237	110	380	300	222
	38.7	37.7				-53.4%			-26.0%
9 Local	657,835	833,723	1.27	1,387	1,069	483	1,333	1,052	776
	28.9	28.7				-55.7%			-26.2%
<b>Subtotal (kg)</b>	<b>3,447,789</b>	<b>4,225,686</b>	<b>1.23</b>	<b>5,083</b>	<b>4,100</b>	<b>1,664</b>	<b>7,645</b>	<b>6,413</b>	<b>4,443</b>
<b>(tons)</b>	<b>44.5</b>	<b>43.2</b>		<b>5.60</b>	<b>4.52</b>	<b>2.06</b>	<b>8.43</b>	<b>7.07</b>	<b>4.90</b>
						<b>-54.5%</b>			<b>-30.7%</b>
<b>Small Urban</b>									
12 Other Fwy/Ex	68,563	89,484	1.31	105	81	42	225	173	132
	65.0	65.0				-48.0%			-23.6%
14 Prin. Arterial	204,536	246,705	1.21	259	217	100	515	434	296
	58.5	57.8				-54.0%			-31.9%
16 Minor Arterial	72,000	86,840	1.21	137	113	48	136	113	78
	30.8	30.4				-57.6%			-31.1%
17 Collector	65,339	82,818	1.27	150	117	51	127	100	73
	26.0	25.7				-56.0%			-27.6%
19 Local	108,487	137,482	1.27	266	209	91	210	165	120
	23.6	23.5				-56.6%			-27.6%
<b>Subtotal (kg)</b>	<b>518,925</b>	<b>643,329</b>	<b>1.24</b>	<b>917</b>	<b>736</b>	<b>332</b>	<b>1,213</b>	<b>986</b>	<b>698</b>
<b>(tons)</b>	<b>37.1</b>	<b>36.6</b>		<b>1.01</b>	<b>0.81</b>	<b>0.37</b>	<b>1.34</b>	<b>1.09</b>	<b>0.77</b>
						<b>-55.0%</b>			<b>-29.2%</b>
<b>Urban</b>									
11 Interstate	2,719,850	3,549,737	1.31	4,056	3,046	1,516	7,184	6,524	4,277

**VMT, VOC, and NOx INVENTORY AND FORECAST**  
**2005 Emissions by County by Functional Class**

	VMT			VOC (kg)			NOx (kg)		
	1990 VMT speed	2005 VMT speed	Growth from 1990	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)	2005 Baseline	2005 Adjusted Baseline	2005 Control Strategy (from '05 AdjBase)
	60.8	50.5				-50.2%			-34.4%
12 Other Fwy/Ex	999,388 61.5	1,304,320 55.6	1.31	1,391	1,111	531 -52.2%	2,649	2,290	1,533 -33.1%
14 Prin. Arterial	4,177,372 28.2	5,038,627 26.7	1.21	8,836	7,002	3,017 -56.9%	7,706	6,425	4,389 -31.7%
16 Minor Arterial	2,234,060 20.3	2,694,667 19.0	1.21	6,338	4,887	2,082 -57.4%	4,061	3,369	2,329 -30.9%
17 Collector	1,520,523 14.3	1,927,083 12.6	1.27	6,591	4,681	1,962 -58.1%	3,045	2,363	1,763 -25.4%
19 Local	1,222,062 10.9	1,548,829 10.0	1.27	6,286	4,626	1,860 -59.8%	2,635	2,053	1,566 -23.7%
Subtotal (kg)	12,873,255	16,063,263	1.25	33,499	25,353	10,968	27,281	23,024	15,857
(tons)	24.0	21.9		36.93	27.95	12.09 -56.7%	30.07	25.38	17.48 -31.1%
Montgomery County									
Totals (kg)	16,839,968	20,932,278	1.24	39,500	30,189	13,164	36,139	30,423	20,998
(tons)	28.8	24.7		43.54	33.28	14.51 -56.4%	39.84	33.53	23.15 -31.0%
							w/ Phase II NOx Credit		21.36 -36.3%
Philadelphia County									
Urban									
11 Interstate	4,230,651 53.7	4,697,752 46.7	1.11	6,773	5,592	2,479 -55.7%	10,658	10,332	6,373 -38.3%
12 Other Fwy/Ex	409,025 60.7	454,186 58.6	1.11	592	543	228 -58.4%	1,138	1,072	658 -38.6%
14 Prin. Arterial	6,332,080 21.7	6,715,550 20.3	1.06	18,036	15,906	5,973 -62.4%	12,026	11,320	6,945 -38.6%
16 Minor Arterial	2,726,627 14.8	2,891,738 13.9	1.06	10,741	9,590	3,337 -65.2%	5,237	4,911	3,044 -38.0%
17 Collector	1,217,717 14.7	1,308,670 14.3	1.07	4,693	4,261	1,478 -65.3%	2,363	2,191	1,371 -37.4%
19 Local	1,569,364 10.3	1,686,812 10.1	1.07	7,870	7,189	2,386 -66.8%	3,204	2,964	1,865 -37.1%
Subtotal (kg)	16,485,464	17,754,508	1.08	48,705	43,080	15,879	34,626	32,789	20,256
(tons)	20.7	19.6		53.69	47.49	17.50 -63.1%	38.17	36.14	22.33 -38.2%
Philadelphia County									
Totals (kg)	16,485,464	17,754,508	1.08	48,705	43,080	15,879	34,626	32,789	20,256
(tons)	20.7	19.6		53.69	47.49	17.50 -63.1%	38.17	36.14	22.33 -38.2%
							w/ Phase II NOx Credit		20.70 -42.7%
Philadelphia 5-County Area									
Totals (kg)	64,602,388	79,712,320	1.23	169,588	129,767	56,027	145,351	121,824	84,748
(tons)	25.2	23.0		186.94	143.08	61.76 -56.8%	160.22	134.29	93.42 -30.4%
							w/ Phase II NOx Credit		86.42 -35.6%

**VMT, VOC, CO and Nox Inventory and Forecast  
Emissions by County by Vehicle Type**

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**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Uncontrolled Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	12,994,008	87.6%		28,074	87.4%	199,054	87.3%	23,677	81.6%
	LDGT1	504,912	3.4%		1,154	3.6%	10,426	4.6%	1,257	4.3%
	LDGT2	352,605	2.4%		902	2.8%	8,516	3.7%	920	3.2%
	HDGV	69,222	0.5%		276	0.9%	2,641	1.2%	378	1.3%
	LDDV	558,659	3.8%		280	0.9%	753	0.3%	840	2.9%
	LDDT	45,305	0.3%		30	0.1%	63	0.0%	84	0.3%
	HDDV	123,770	0.8%		200	0.6%	1,111	0.5%	1,670	5.8%
	MC	181,003	1.2%		1,213	3.8%	5,372	2.4%	188	0.6%
	Total	14,829,484		23.5	32,128		227,936		29,015	
				total tons:	35.42		251.25		31.98	
					kg	ton	pct.			
					Exhaust	17,140	18.89	53.3%		
					Evaporative	3,981	4.39	12.4%		
					Refueling	0	0.00	0.0%		
					Running Loss	9,821	10.83	30.6%		
					Resting Loss	1,186	1.31	3.7%		
Chester	LDGV	11,007,230	86.6%		17,646	84.6%	125,016	84.6%	19,523	79.2%
	LDGT1	497,358	3.9%		924	4.4%	8,499	5.8%	1,231	5.0%
	LDGT2	347,266	2.7%		722	3.5%	7,019	4.7%	907	3.7%
	HDGV	66,968	0.5%		216	1.0%	2,116	1.4%	380	1.5%
	LDDV	474,094	3.7%		188	0.9%	507	0.3%	685	2.8%
	LDDT	45,846	0.4%		24	0.1%	53	0.0%	84	0.3%
	HDDV	121,683	1.0%		166	0.8%	918	0.6%	1,674	6.8%
	MC	152,529	1.2%		984	4.7%	3,650	2.5%	171	0.7%
	Total	12,712,974		31.6	20,870		147,778		24,654	
				total tons:	23.00		162.90		27.18	
					kg	ton	pct.			
					Exhaust	11,303	12.46	54.2%		
					Evaporative	3,232	3.56	15.5%		
					Refueling	0	0.00	0.0%		
					Running Loss	5,323	5.87	25.5%		
					Resting Loss	1,012	1.12	4.9%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Uncontrolled Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	8,951,690	87.7%	18,784	87.5%	127,044	87.8%	14,458	81.8%
	LDGT1	340,670	3.3%	760	3.5%	6,440	4.5%	748	4.2%
	LDGT2	237,531	2.3%	560	2.6%	4,890	3.4%	527	3.0%
	HDGV	45,981	0.5%	180	0.8%	1,592	1.1%	240	1.4%
	LDDV	384,722	3.8%	197	0.9%	514	0.4%	512	2.9%
	LDDT	31,586	0.3%	22	0.1%	44	0.0%	52	0.3%
	HDDV	84,440	0.8%	144	0.7%	766	0.5%	1,030	5.8%
	MC	124,927	1.2%	826	3.8%	3,351	2.3%	115	0.6%
	Total	10,201,547		21,473		144,642		17,683	
			22.7 total tons:	23.67		159.44		19.49	
				kg	ton	pct.			
				Exhaust	11,175	12.32	52.0%		
				Evaporative	2,600	2.87	12.1%		
				Refueling	0	0.00	0.0%		
				Running Loss	6,886	7.59	32.1%		
				Resting Loss	813	0.90	3.8%		
Montgomery	LDGV	17,224,976	87.6%	32,250	86.3%	218,884	86.7%	28,653	81.2%
	LDGT1	667,411	3.4%	1,468	3.9%	12,548	5.0%	1,556	4.4%
	LDGT2	467,640	2.4%	1,103	3.0%	9,751	3.9%	1,124	3.2%
	HDGV	89,147	0.5%	328	0.9%	2,955	1.2%	477	1.3%
	LDDV	740,501	3.8%	341	0.9%	912	0.4%	1,012	2.9%
	LDDT	60,999	0.3%	40	0.1%	84	0.0%	108	0.3%
	HDDV	163,281	0.8%	269	0.7%	1,488	0.6%	2,135	6.0%
	MC	239,379	1.2%	1,567	4.2%	5,902	2.3%	240	0.7%
	Total	19,653,334		37,367		252,523		35,305	
			25.5 total tons:	41.19		278.36		38.92	
				kg	ton	pct.			
				Exhaust	19,618	21.62	52.5%		
				Evaporative	4,976	5.49	13.3%		
				Refueling	0	0.00	0.0%		
				Running Loss	11,205	12.35	30.0%		
				Resting Loss	1,568	1.73	4.2%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

1999 Uncontrolled Baseline

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,136,525	87.2%		42,968	88.4%	305,768	88.4%	28,739	81.6%
	LDGT1	620,679	3.6%		1,770	3.6%	15,752	4.6%	1,596	4.5%
	LDGT2	437,089	2.5%		1,280	2.6%	11,648	3.4%	1,117	3.2%
	HDGV	84,353	0.5%		386	0.8%	3,536	1.0%	453	1.3%
	LDDV	651,183	3.8%		422	0.9%	1,077	0.3%	1,017	2.9%
	LDDT	57,983	0.3%		49	0.1%	97	0.0%	114	0.3%
	HDDV	154,830	0.9%		277	0.6%	1,526	0.4%	2,006	5.7%
	MC	209,722	1.2%		1,451	3.0%	6,499	1.9%	185	0.5%
	Total	17,352,364		19.9	46,603		345,902		35,228	
				total tons:	53.57		381.29		38.83	

	kg	ton	pct.
Exhaust	26,123	28.80	53.7%
Evaporative	5,102	5.62	10.5%
Refueling	0	0.00	0.0%
Running Loss	15,832	17.45	32.6%
Resting Loss	1,546	1.70	3.2%

**Area Total**

LDGV	65,314,429	87.4%		139,722	87.1%	975,765	87.2%	115,051	81.1%
LDGT1	2,631,030	3.5%		6,076	3.8%	53,665	4.8%	6,389	4.5%
LDGT2	1,842,131	2.5%		4,567	2.8%	41,823	3.7%	4,596	3.2%
HDGV	355,671	0.5%		1,386	0.9%	12,840	1.1%	1,928	1.4%
LDDV	2,809,159	3.8%		1,428	0.9%	3,765	0.3%	4,066	2.9%
LDDT	241,719	0.3%		164	0.1%	341	0.0%	441	0.3%
HDDV	648,004	0.9%		1,056	0.7%	5,809	0.5%	8,516	6.0%
MC	907,560	1.2%		6,042	3.8%	24,774	2.2%	899	0.6%
Total:	74,749,703		23.9	160,441		1,118,781		141,885	
			Total Tons:	176.85		1,233.23		156.40	

	kg	tons	pct.
Exhaust	85,358	94.09	53.2%
Evaporative	19,892	21.93	12.4%
Refueling	0	0.00	0.0%
Running Loss	49,066	54.09	30.6%
Resting Loss	6,125	6.75	3.8%



**VTM, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Adjusted Baseline**

County		VTM		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	11,256,289	87.6%		22,266	86.9%	162,765	87.1%	20,721	81.5%
	LDGT1	439,011	3.4%		949	3.7%	8,853	4.7%	1,109	4.4%
	LDGT2	306,774	2.4%		742	2.9%	7,253	3.9%	813	3.2%
	HDGV	60,203	0.5%		225	0.9%	2,190	1.2%	333	1.3%
	LDDV	483,922	3.8%		230	0.9%	610	0.3%	729	2.9%
	LDDT	39,400	0.3%		25	0.1%	52	0.0%	74	0.3%
	HDDV	107,653	0.8%		166	0.6%	917	0.5%	1,467	5.8%
	MC	156,796	1.2%		1,029	4.0%	4,339	2.3%	167	0.7%
	Total	12,850,048		26.4	25,632		186,978		25,413	
				total tons:	28.25		206.11		28.01	

	kg	ton	pct.
Exhaust	13,961	15.39	54.5%
Evaporative	3,450	3.80	13.5%
Refueling	0	0.00	0.0%
Running Loss	7,193	7.93	28.1%
Resting Loss	1,028	1.13	4.0%

Chester	LDGV	8,783,345	86.6%		13,545	84.2%	99,536	84.4%	15,964	79.1%
	LDGT1	398,456	3.9%		726	4.5%	6,903	5.9%	1,012	5.0%
	LDGT2	278,221	2.7%		568	3.5%	5,727	4.9%	746	3.7%
	HDGV	53,668	0.5%		168	1.0%	1,683	1.4%	308	1.5%
	LDDV	378,292	3.7%		144	0.9%	393	0.3%	562	2.8%
	LDDT	36,723	0.4%		19	0.1%	41	0.0%	69	0.3%
	HDDV	97,484	1.0%		129	0.8%	722	0.6%	1,378	6.8%
	MC	121,675	1.2%		784	4.9%	2,981	2.5%	141	0.7%
	Total	10,147,864		33.8	16,083		117,987		20,179	
				total tons:	17.73		130.06		22.24	

	kg	ton	pct.
Exhaust	8,864	9.77	55.1%
Evaporative	2,580	2.84	16.0%
Refueling	0	0.00	0.0%
Running Loss	3,831	4.22	23.8%
Resting Loss	808	0.89	5.0%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Adjusted Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	7,298,370	88.2%		14,971	87.6%	105,889	87.9%	12,225	82.2%
	LDGT1	260,358	3.1%		588	3.4%	5,365	4.5%	611	4.1%
	LDGT2	181,359	2.2%		434	2.5%	4,093	3.4%	430	2.9%
	HDGV	34,920	0.4%		136	0.8%	1,268	1.1%	184	1.2%
	LDDV	313,605	3.8%		157	0.9%	415	0.3%	436	2.9%
	LDDT	24,222	0.3%		17	0.1%	35	0.0%	43	0.3%
	HDDV	64,385	0.8%		110	0.6%	598	0.5%	851	5.7%
	MC	101,825	1.2%		676	4.0%	2,863	2.4%	98	0.7%
	Total	8,279,044		23.7	17,089		120,526		14,879	
				total tons:	18.84		132.86		16.40	
					kg	ton	pct.			
					Exhaust	9,064	9.99	53.0%		
					Evaporative	2,109	2.33	12.3%		
					Refueling	0	0.00	0.0%		
					Running Loss	5,255	5.79	30.7%		
					Resting Loss	661	0.73	3.9%		
Montgomery	LDGV	14,770,267	87.7%		26,890	86.2%	189,817	86.5%	25,433	81.1%
	LDGT1	566,593	3.4%		1,234	4.0%	11,144	5.1%	1,385	4.4%
	LDGT2	396,975	2.4%		928	3.0%	8,694	4.0%	1,001	3.2%
	HDGV	75,639	0.4%		271	0.9%	2,529	1.2%	410	1.3%
	LDDV	634,947	3.8%		285	0.9%	767	0.3%	901	2.9%
	LDDT	51,741	0.3%		33	0.1%	71	0.0%	96	0.3%
	HDDV	138,570	0.8%		224	0.7%	1,252	0.6%	1,902	6.1%
	MC	205,237	1.2%		1,348	4.3%	5,292	2.4%	215	0.7%
	Total	16,839,969		26.8	31,212		219,567		31,343	
				total tons:	34.41		242.03		34.55	
					kg	ton	pct.			
					Exhaust	16,681	18.39	53.4%		
					Evaporative	4,264	4.70	13.7%		
					Refueling	0	0.00	0.0%		
					Running Loss	8,924	9.84	28.6%		
					Resting Loss	1,344	1.48	4.3%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Adjusted Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	14,388,104	87.3%						
	LDGT1	586,141	3.6%	39,420	88.3%	284,506	88.4%	27,826	81.6%
	LDGT2	412,431	2.5%	1,637	3.7%	14,729	4.6%	1,556	4.6%
	HDGV	79,590	0.5%	1,182	2.6%	10,879	3.4%	1,087	3.2%
	LDDV	618,960	3.8%	355	0.8%	3,303	1.0%	433	1.3%
	LDDT	54,756	0.3%	393	0.9%	997	0.3%	975	2.9%
	HDDV	146,110	0.9%	45	0.1%	90	0.0%	110	0.3%
	HDDV	146,110	0.9%	256	0.6%	1,416	0.4%	1,933	5.7%
	MC	199,372	1.2%	1,369	3.1%	6,005	1.9%	180	0.5%
	Total	16,485,464		44,657		321,924		34,100	
			20.7	total tons:	49.23	354.86		37.59	

	kg	ton	pct.
Exhaust	24,237	26.72	54.3%
Evaporative	4,847	5.34	10.9%
Refueling	0	0.00	0.0%
Running Loss	14,104	15.55	31.6%
Resting Loss	1,468	1.62	3.3%

**Area Total**

LDGV	56,496,375	87.5%							
LDGT1	2,250,559	3.5%		117,092	86.9%	842,512	87.1%	102,170	81.1%
LDGT2	1,575,760	2.4%		5,135	3.8%	46,994	4.9%	5,672	4.5%
HDGV	304,020	0.5%		3,853	2.9%	36,646	3.8%	4,077	3.2%
LDDV	2,429,726	3.8%		1,155	0.9%	10,973	1.1%	1,668	1.3%
LDDT	206,842	0.3%		1,209	0.9%	3,182	0.3%	3,604	2.9%
LDDT	206,842	0.3%		138	0.1%	289	0.0%	391	0.3%
HDDV	554,202	0.9%		885	0.7%	4,905	0.5%	7,531	6.0%
MC	784,905	1.2%		5,206	3.9%	21,481	2.2%	801	0.6%
Total:	64,602,389		25.2	134,674		966,981		125,914	
			Total Tons:	148.45		1,065.90		138.80	

	kg	tons	pct.
Exhaust	72,808	80.26	54.1%
Evaporative	17,250	19.01	12.8%
Refueling	0	0.00	0.0%
Running Loss	39,307	43.33	29.2%
Resting Loss	5,309	5.85	3.9%

**VTM, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Control Strategy**

County		VTM		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	12,994,008	87.6%		13,337	82.4%	89,536	84.3%	15,704	76.9%
	LDGT1	504,912	3.4%		537	3.3%	4,360	4.1%	817	4.0%
	LDGT2	352,605	2.4%		435	2.7%	3,622	3.4%	662	3.2%
	HDGV	69,222	0.5%		219	1.4%	2,145	2.0%	376	1.8%
	LDDV	558,659	3.8%		280	1.7%	753	0.7%	840	4.1%
	LDDT	45,305	0.3%		30	0.2%	63	0.1%	84	0.4%
	HDDV	123,770	0.8%		200	1.2%	1,111	1.0%	1,761	8.6%
	MC	181,003	1.2%		1,141	7.1%	4,604	4.3%	188	0.9%
	Total	14,829,484		23.5	16,177		106,195		20,432	
				total tons:	17.83		117.06		22.52	

	kg	ton	pct.
Exhaust	9,592	10.57	59.3%
Evaporative	2,090	2.30	12.9%
Refueling	0	0.00	0.0%
Running Loss	3,416	3.77	21.1%
Resting Loss	1,079	1.19	6.7%

Chester	LDGV	11,007,230	86.6%		8,652	79.3%	57,489	81.7%	13,004	74.1%
	LDGT1	497,358	3.9%		436	4.0%	3,576	5.1%	798	4.5%
	LDGT2	347,266	2.7%		356	3.3%	2,999	4.3%	656	3.7%
	HDGV	66,968	0.5%		170	1.6%	1,712	2.4%	377	2.2%
	LDDV	474,094	3.7%		188	1.7%	507	0.7%	685	3.9%
	LDDT	45,846	0.4%		24	0.2%	53	0.1%	84	0.5%
	HDDV	121,683	1.0%		166	1.5%	918	1.3%	1,765	10.1%
	MC	152,529	1.2%		922	8.4%	3,139	4.5%	170	1.0%
	Total	12,712,974		31.6	10,914		70,394		17,539	
				total tons:	12.03		77.60		19.33	

	kg	ton	pct.
Exhaust	6,440	7.10	59.0%
Evaporative	1,710	1.88	15.7%
Refueling	0	0.00	0.0%
Running Loss	1,846	2.03	16.9%
Resting Loss	918	1.01	8.4%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Control Strategy**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	8,951,690	87.7%		8,853	82.3%	57,707	84.8%	9,457	76.7%
	LDGT1	340,670	3.3%		352	3.3%	2,715	4.0%	483	3.9%
	LDGT2	237,531	2.3%		269	2.5%	2,110	3.1%	379	3.1%
	HDGV	45,981	0.5%		143	1.3%	1,284	1.9%	238	1.9%
	LDDV	384,722	3.8%		197	1.8%	514	0.8%	512	4.2%
	LDDT	31,586	0.3%		22	0.2%	44	0.1%	52	0.4%
	HDDV	84,440	0.8%		144	1.3%	766	1.1%	1,086	8.8%
	MC	124,927	1.2%		777	7.2%	2,872	4.2%	115	0.9%
	Total	10,201,547		22.7	10,755		68,011		12,323	
				total tons:	11.86		74.97		13.58	

	kg	ton	pct.
Exhaust	6,236	6.87	58.0%
Evaporative	1,350	1.49	12.5%
Refueling	0	0.00	0.0%
Running Loss	2,431	2.68	22.6%
Resting Loss	739	0.81	6.9%

Montgomery	LDGV	17,224,976	87.6%		15,527	81.2%	100,892	83.9%	18,971	76.3%
	LDGT1	667,411	3.4%		686	3.6%	5,292	4.4%	1,008	4.1%
	LDGT2	467,640	2.4%		529	2.8%	4,169	3.5%	809	3.3%
	HDGV	89,147	0.5%		259	1.4%	2,369	2.0%	474	1.9%
	LDDV	740,501	3.8%		341	1.8%	912	0.8%	1,012	4.1%
	LDDT	60,999	0.3%		40	0.2%	84	0.1%	108	0.4%
	HDDV	163,281	0.8%		269	1.4%	1,487	1.2%	2,250	9.0%
	MC	239,379	1.2%		1,471	7.7%	5,062	4.2%	239	1.0%
	Total	19,653,334		25.5	19,123		120,267		24,872	
				total tons:	21.08		132.57		27.42	

	kg	ton	pct.
Exhaust	11,094	12.23	58.0%
Evaporative	2,627	2.90	13.7%
Refueling	0	0.00	0.0%
Running Loss	3,977	4.38	20.8%
Resting Loss	1,425	1.57	7.5%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**1999 Control Strategy**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,136,525	87.2%	19,632	83.7%	129,008	85.2%	18,561	76.5%
	LDGT1	620,679	3.6%	809	3.4%	6,434	4.2%	1,036	4.3%
	LDGT2	437,089	2.5%	606	2.6%	4,885	3.2%	786	3.2%
	HDGV	84,353	0.5%	307	1.3%	2,870	1.9%	451	1.9%
	LDDV	651,183	3.8%	422	1.8%	1,077	0.7%	1,017	4.2%
	LDDT	57,983	0.3%	49	0.2%	97	0.1%	114	0.5%
	HDDV	154,830	0.9%	277	1.2%	1,526	1.0%	2,115	8.7%
	MC	209,722	1.2%	1,364	5.8%	5,559	3.7%	184	0.8%
	Total	17,352,364		23,465		151,457		24,265	
			19.9	total tons:	25.87	166.95		26.75	

	kg	ton	pct.
Exhaust	13,840	15.26	59.0%
Evaporative	2,601	2.87	11.1%
Refueling	0	0.00	0.0%
Running Loss	5,605	6.18	23.9%
Resting Loss	1,420	1.56	6.0%

**Area Total**

LDGV	65,314,429	87.4%	66,002	82.1%	434,632	84.2%	75,698	76.1%
LDGT1	2,631,030	3.5%	2,820	3.5%	22,377	4.3%	4,142	4.2%
LDGT2	1,842,131	2.5%	2,194	2.7%	17,787	3.4%	3,293	3.3%
HDGV	355,671	0.5%	1,097	1.4%	10,380	2.0%	1,917	1.9%
LDDV	2,809,159	3.8%	1,428	1.8%	3,764	0.7%	4,066	4.1%
LDDT	241,719	0.3%	164	0.2%	341	0.1%	441	0.4%
HDDV	648,004	0.9%	1,056	1.3%	5,808	1.1%	8,979	9.0%
MC	907,560	1.2%	5,674	7.1%	21,236	4.1%	896	0.9%
Total:	74,749,703		80,435		516,325		99,431	
			23.9	Total Tons:	88.66	569.14	109.60	

	kg	tons	pct.
Exhaust	47,202	52.03	58.7%
Evaporative	10,377	11.44	12.9%
Refueling	0	0.00	0.0%
Running Loss	17,275	19.04	21.5%
Resting Loss	5,581	6.15	6.9%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Uncontrolled Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx		
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.	
Bucks	LDGV	13,459,797	87.6%		29,127	87.7%	196,862	87.8%	24,176	82.4%	
	LDGT1	522,843	3.4%		1,169	3.5%	9,792	4.4%	1,294	4.4%	
	LDGT2	365,137	2.4%		901	2.7%	7,890	3.5%	955	3.3%	
	HDGV	71,682	0.5%		258	0.8%	2,079	0.9%	385	1.3%	
	LDDV	578,677	3.8%		261	0.8%	749	0.3%	777	2.6%	
	LDDT	46,912	0.3%		26	0.1%	61	0.0%	74	0.3%	
	HDDV	128,164	0.8%		200	0.6%	1,143	0.5%	1,481	5.0%	
	MC	187,511	1.2%		1,265	3.8%	5,685	2.5%	194	0.7%	
	Total	15,360,723		22.7	33,209		224,261		29,335		
				total tons:	36.61		247.20		32.34		
				kg	ton	pct.					
				Exhaust	17,472	19.26	52.6%				
				Evaporative	3,792	4.18	11.4%				
				Refueling	0	0.00	0.0%				
				Running Loss	10,722	11.82	32.3%				
				Resting Loss	1,224	1.35	3.7%				
Chester	LDGV	11,650,647	86.6%		18,488	84.9%	124,306	85.2%	20,249	80.1%	
	LDGT1	526,004	3.9%		945	4.3%	7,945	5.4%	1,282	5.1%	
	LDGT2	367,262	2.7%		729	3.3%	6,463	4.4%	949	3.8%	
	HDGV	70,824	0.5%		206	0.9%	1,694	1.2%	394	1.6%	
	LDDV	501,804	3.7%		181	0.8%	518	0.4%	653	2.6%	
	LDDT	48,500	0.4%		22	0.1%	52	0.0%	76	0.3%	
	HDDV	128,690	1.0%		170	0.8%	958	0.7%	1,507	6.0%	
	MC	161,461	1.2%		1,044	4.8%	3,885	2.7%	179	0.7%	
	Total	13,455,192		30.8	21,785		145,821		25,288		
				total tons:	24.01		160.74		27.88		
				kg	ton	pct.					
				Exhaust	11,682	12.88	53.6%				
				Evaporative	3,203	3.53	14.7%				
				Refueling	0	0.00	0.0%				
				Running Loss	5,831	6.43	26.8%				
				Resting Loss	1,069	1.18	4.9%				

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Uncontrolled Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	9,270,674	87.7%	19,418	87.7%	128,097	88.2%	14,779	82.7%
	LDGT1	352,888	3.3%	775	3.5%	6,284	4.3%	771	4.3%
	LDGT2	246,078	2.3%	565	2.6%	4,699	3.2%	544	3.0%
	HDGV	47,631	0.5%	170	0.8%	1,268	0.9%	243	1.4%
	LDDV	398,432	3.8%	179	0.8%	507	0.3%	465	2.6%
	LDDT	32,717	0.3%	19	0.1%	43	0.0%	45	0.3%
	HDDV	87,468	0.8%	145	0.7%	789	0.5%	910	5.1%
	MC	129,383	1.2%	861	3.9%	3,544	2.4%	118	0.7%
	Total	10,565,271	22.2	22,132		145,231		17,875	
			total tons:	24.40		160.09		19.70	
				kg	ton	pct.			
				Exhaust	11,432	12.60	51.7%		
				Evaporative	2,503	2.76	11.3%		
				Refueling	0	0.00	0.0%		
				Running Loss	7,356	8.11	33.2%		
				Resting Loss	841	92.7%	3.8%		
Montgomery	LDGV	17,785,693	87.6%	32,988	86.5%	216,448	87.1%	29,121	82.0%
	LDGT1	688,863	3.4%	1,483	3.9%	11,951	4.8%	1,591	4.5%
	LDGT2	482,729	2.4%	1,100	2.9%	9,162	3.7%	1,151	3.2%
	HDGV	91,999	0.5%	310	0.8%	2,370	1.0%	482	1.4%
	LDDV	764,605	3.8%	317	0.8%	901	0.4%	936	2.6%
	LDDT	62,960	0.3%	35	0.1%	80	0.0%	94	0.3%
	HDDV	168,525	0.8%	269	0.7%	1,515	0.6%	1,877	5.3%
	MC	247,177	1.2%	1,622	4.3%	6,129	2.5%	246	0.7%
	Total	20,292,551	25.1	38,123		248,556		35,498	
			total tons:	42.02		273.98		39.13	
				kg	ton	pct.			
				Exhaust	19,808	21.83	52.0%		
				Evaporative	4,856	5.35	12.7%		
				Refueling	0	0.00	0.0%		
				Running Loss	11,842	13.05	31.1%		
				Resting Loss	1,617	1.78	4.2%		



**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Uncontrolled Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,310,967	87.2%						
	LDGT1	628,339	3.6%	42,886	88.7%	294,400	88.8%	28,627	82.5%
	LDGT2	442,412	2.5%	1,727	3.6%	14,457	4.4%	1,619	4.7%
	HDGV	85,397	0.5%	1,232	2.5%	10,566	3.2%	1,130	3.3%
	LDDV	658,688	3.8%	352	0.7%	2,727	0.8%	447	1.3%
	LDDT	58,700	0.3%	362	0.7%	1,006	0.3%	869	2.5%
	HDDV	156,741	0.9%	41	0.1%	89	0.0%	95	0.3%
	MC	212,119	1.2%	271	0.6%	1,522	0.5%	1,737	5.0%
				1,471	3.0%	6,629	2.0%	186	0.5%
	Total	17,553,363		48,341		331,396		34,710	
			19.7 total tons:	53.29		365.30		38.26	

	kg	ton	pct.
Exhaust	25,673	28.30	53.1%
Evaporative	4,926	5.43	10.2%
Refueling	0	0.00	0.0%
Running Loss	16,241	17.90	33.6%
Resting Loss	1,501	1.65	3.1%

**Area Total**

LDGV	67,477,778	87.4%							
LDGT1	2,718,937	3.5%		142,907	87.4%	960,113	87.7%	116,951	82.0%
LDGT2	1,903,618	2.5%		6,098	3.7%	50,429	4.6%	6,557	4.6%
HDGV	367,533	0.5%		4,527	2.8%	38,780	3.5%	4,728	3.3%
LDDV	2,902,206	3.8%		1,296	0.8%	10,138	0.9%	1,950	1.4%
LDDT	249,789	0.3%		1,301	0.8%	3,681	0.3%	3,699	2.6%
HDDV	669,588	0.9%		143	0.1%	325	0.0%	385	0.3%
MC	937,651	1.2%		1,056	0.6%	5,926	0.5%	7,512	5.3%
				6,263	3.8%	25,873	2.4%	922	0.6%
Total:	77,227,100		23.5	163,591		1,095,265		142,705	
			Total Tons:	180.33		1,207.31		157.30	

	kg	tons	pct.
Exhaust	86,066	94.87	52.6%
Evaporative	19,280	21.25	11.8%
Refueling	0	0.00	0.0%
Running Loss	51,993	57.31	31.8%
Resting Loss	6,252	6.89	3.8%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

2002 Adjusted Baseline

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	11,256,289	87.6%		21,655	87.0%	151,785	87.5%	20,456	82.3%
	LDGT1	439,011	3.4%		911	3.7%	7,883	4.5%	1,105	4.4%
	LDGT2	306,774	2.4%		702	2.8%	6,382	3.7%	817	3.3%
	HDGV	60,203	0.5%		200	0.8%	1,644	0.9%	327	1.3%
	LDDV	483,922	3.8%		205	0.8%	576	0.3%	650	2.6%
	LDDT	39,400	0.3%		21	0.1%	48	0.0%	63	0.3%
	HDDV	107,653	0.8%		159	0.6%	898	0.5%	1,259	5.1%
	MC	156,796	1.2%		1,029	4.1%	4,339	2.5%	167	0.7%
	Total	12,850,048		26.4	24,881		173,555		24,844	
				total tons:	27.43		191.31		27.39	

	kg	ton	pct.
Exhaust	13,497	14.88	54.2%
Evaporative	3,172	3.50	12.7%
Refueling	0	0.00	0.0%
Running Loss	7,189	7.92	28.9%
Resting Loss	1,024	1.13	4.1%

Chester	LDGV	8,783,345	86.6%		13,152	84.4%	91,991	84.9%	15,755	80.0%
	LDGT1	398,456	3.9%		694	4.5%	6,026	5.6%	1,004	5.1%
	LDGT2	278,221	2.7%		536	3.4%	4,929	4.6%	743	3.8%
	HDGV	53,668	0.5%		149	1.0%	1,271	1.2%	302	1.5%
	LDDV	378,292	3.7%		131	0.8%	374	0.3%	510	2.6%
	LDDT	36,723	0.4%		16	0.1%	38	0.0%	60	0.3%
	HDDV	97,484	1.0%		124	0.8%	707	0.7%	1,183	6.0%
	MC	121,675	1.2%		784	5.0%	2,981	2.8%	141	0.7%
	Total	10,147,864		33.8	15,587		108,316		19,699	
				total tons:	17.18		119.40		21.71	

	kg	ton	pct.
Exhaust	8,536	9.41	54.8%
Evaporative	2,416	2.66	15.5%
Refueling	0	0.00	0.0%
Running Loss	3,829	4.22	24.6%
Resting Loss	806	0.89	5.2%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Adjusted Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	7,298,370	88.2%		14,655	87.8%	100,543	88.2%	12,088	83.0%
	LDGT1	260,358	3.1%		567	3.4%	4,890	4.3%	611	4.2%
	LDGT2	181,359	2.2%		414	2.5%	3,674	3.2%	431	3.0%
	HDGV	34,920	0.4%		122	0.7%	962	0.8%	182	1.2%
	LDDV	313,605	3.8%		136	0.8%	388	0.3%	383	2.6%
	LDDT	24,222	0.3%		14	0.1%	32	0.0%	37	0.3%
	HDDV	64,385	0.8%		106	0.6%	586	0.5%	730	5.0%
	MC	101,825	1.2%		676	4.1%	2,863	2.5%	98	0.7%
	Total	8,279,044		23.7	16,690		113,938		14,560	
				total tons:	18.40		125.59		16.05	

	kg	ton	pct.
Exhaust	8,813	9.71	52.8%
Evaporative	1,961	2.16	11.7%
Refueling	0	0.00	0.0%
Running Loss	5,256	5.79	31.5%
Resting Loss	660	0.73	4.0%

Montgomery	LDGV	14,770,267	87.7%		26,324	86.3%	179,285	86.9%	25,129	82.0%
	LDGT1	566,593	3.4%		1,194	3.9%	10,090	4.9%	1,382	4.5%
	LDGT2	396,975	2.4%		886	2.9%	7,763	3.8%	1,000	3.3%
	HDGV	75,639	0.4%		245	0.8%	1,956	0.9%	403	1.3%
	LDDV	634,947	3.8%		255	0.8%	727	0.4%	810	2.6%
	LDDT	51,741	0.3%		28	0.1%	65	0.0%	82	0.3%
	HDDV	138,570	0.8%		215	0.7%	1,227	0.6%	1,632	5.3%
	MC	205,237	1.2%		1,348	4.4%	5,292	2.6%	215	0.7%
	Total	16,839,969		26.8	30,494		206,405		30,654	
				total tons:	33.61		227.52		33.79	

	kg	ton	pct.
Exhaust	16,200	17.86	53.1%
Evaporative	4,030	4.44	13.2%
Refueling	0	0.00	0.0%
Running Loss	8,922	9.83	29.3%
Resting Loss	1,342	1.48	4.4%

**VT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

2002 Adjusted Baseline

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	14,388,104	87.3%	38,581	88.6%	268,463	88.8%	27,404	82.5%
	LDGT1	586,141	3.6%	1,565	3.6%	13,227	4.4%	1,563	4.7%
	LDGT2	412,431	2.5%	1,116	2.6%	9,664	3.2%	1,089	3.3%
	HDGV	79,590	0.5%	317	0.7%	2,504	0.8%	422	1.3%
	LDDV	618,960	3.8%	331	0.8%	913	0.3%	825	2.5%
	LDDT	54,756	0.3%	37	0.1%	81	0.0%	91	0.3%
	HDDV	146,110	0.9%	245	0.6%	1,386	0.5%	1,659	5.0%
	MC	199,372	1.2%	1,369	3.1%	6,005	2.0%	180	0.5%
	Total	16,485,464		43,561		302,244		33,233	
				20.7					
				total tons:	48.02	333.16		36.63	

	kg	ton	pct.
Exhaust	23,412	25.81	53.7%
Evaporative	4,626	5.10	10.6%
Refueling	0	0.00	0.0%
Running Loss	14,113	15.56	32.4%
Resting Loss	1,410	1.55	3.2%

**Area Total**

LDGV	56,496,375	87.5%	114,366	87.2%	792,067	87.6%	100,832	82.0%
LDGT1	2,250,559	3.5%	4,931	3.8%	42,117	4.7%	5,665	4.6%
LDGT2	1,575,760	2.4%	3,654	2.8%	32,412	3.6%	4,081	3.3%
HDGV	304,020	0.5%	1,033	0.8%	8,336	0.9%	1,637	1.3%
LDDV	2,429,726	3.8%	1,059	0.8%	2,977	0.3%	3,179	2.6%
LDDT	206,842	0.3%	116	0.1%	264	0.0%	332	0.3%
HDDV	554,202	0.9%	848	0.6%	4,804	0.5%	6,462	5.3%
MC	784,905	1.2%	5,206	4.0%	21,481	2.4%	801	0.7%
Total:	64,602,389		131,213		904,458		122,989	
				25.2				
				Total Tons:	144.64	996.98		135.57

	kg	tons	pct.
Exhaust	70,457	77.66	53.7%
Evaporative	16,205	17.86	12.3%
Refueling	0	0.00	0.0%
Running Loss	39,310	43.33	30.0%
Resting Loss	5,242	5.78	4.0%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Control Strategy**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	13,459,797	87.6%		10,220	80.0%	84,795	84.7%	14,406	77.1%
	LDGT1	522,843	3.4%		423	3.3%	3,798	3.8%	730	3.9%
	LDGT2	365,137	2.4%		337	2.6%	3,145	3.1%	616	3.3%
	HDGV	71,682	0.5%		170	1.3%	1,606	1.6%	364	1.9%
	LDDV	578,677	3.8%		261	2.0%	749	0.7%	776	4.2%
	LDDT	46,912	0.3%		26	0.2%	61	0.1%	74	0.4%
	HDDV	128,164	0.8%		200	1.6%	1,142	1.1%	1,522	8.1%
	MC	187,511	1.2%		1,136	8.9%	4,871	4.9%	193	1.0%
	Total	15,360,723		22.7	12,774		100,168		18,681	
				total tons:	14.08		110.42		20.59	
						w/ Phase II RFG NOx Credit		19.21		
					kg	ton	pct.			
				Exhaust	8,272	9.12	64.8%			
				Evaporative	1,621	1.79	12.7%			
				Refueling	0	0.00	0.0%			
				Running Loss	2,000	2.20	15.7%			
				Resting Loss	881	0.97	6.9%			
Chester	LDGV	11,650,647	86.6%		6,780	76.6%	54,690	82.1%	12,027	74.3%
	LDGT1	526,004	3.9%		350	3.9%	3,114	4.7%	721	4.5%
	LDGT2	367,262	2.7%		280	3.2%	2,611	3.9%	617	3.8%
	HDGV	70,824	0.5%		134	1.5%	1,304	2.0%	372	2.3%
	LDDV	501,804	3.7%		181	2.1%	518	0.8%	653	4.0%
	LDDT	48,500	0.4%		22	0.3%	52	0.1%	76	0.5%
	HDDV	128,690	1.0%		170	1.9%	957	1.4%	1,549	9.6%
	MC	161,461	1.2%		933	10.5%	3,338	5.0%	178	1.1%
	Total	13,455,192		30.8	8,850		66,585		16,193	
				total tons:	9.76		73.40		17.85	
						w/ Phase II RFG NOx Credit		16.63		
					kg	ton	pct.			
				Exhaust	5,598	6.17	63.3%			
				Evaporative	1,401	1.54	15.8%			
				Refueling	0	0.00	0.0%			
				Running Loss	1,103	1.22	12.5%			
				Resting Loss	748	0.82	8.5%			

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Control Strategy**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	9,270,674	87.7%		6,744	79.7%	55,170	85.0%	8,664	77.1%
	LDGT1	352,888	3.3%		279	3.3%	2,442	3.8%	431	3.8%
	LDGT2	246,078	2.3%		212	2.5%	1,917	3.0%	353	3.1%
	HDGV	47,631	0.5%		111	1.3%	972	1.5%	229	2.0%
	LDDV	398,432	3.8%		179	2.1%	507	0.8%	465	4.1%
	LDDT	32,717	0.3%		19	0.2%	43	0.1%	45	0.4%
	HDDV	87,468	0.8%		145	1.7%	788	1.2%	935	8.3%
	MC	129,383	1.2%		772	9.1%	3,036	4.7%	117	1.0%
	Total	10,565,271		22.2	8,462		64,874		11,241	
				total tons:	9.33		71.51		12.39	
									w/ Phase II RFG NOx Credit	11.51
					kg	ton	pct.			
					Exhaust	5,383	5.93	63.6%		
					Evaporative	1,084	1.19	12.8%		
					Refueling	0	0.00	0.0%		
					Running Loss	1,408	1.55	16.6%		
					Resting Loss	588	0.65	6.9%		
Montgomery	LDGV	17,785,693	87.6%		11,700	78.4%	95,053	84.1%	17,246	76.5%
	LDGT1	688,863	3.4%		536	3.6%	4,659	4.1%	895	4.0%
	LDGT2	482,729	2.4%		411	2.8%	3,702	3.3%	747	3.3%
	HDGV	91,999	0.5%		202	1.4%	1,805	1.6%	454	2.0%
	LDDV	764,605	3.8%		317	2.1%	901	0.8%	936	4.2%
	LDDT	62,960	0.3%		35	0.2%	80	0.1%	94	0.4%
	HDDV	168,525	0.8%		269	1.8%	1,514	1.3%	1,929	8.6%
	MC	247,177	1.2%		1,453	9.7%	5,255	4.7%	245	1.1%
	Total	20,292,551		25.1	14,923		112,970		22,546	
				total tons:	16.45		124.53		24.85	
									w/ Phase II RFG NOx Credit	23.12
					kg	ton	pct.			
					Exhaust	9,440	10.41	63.3%		
					Evaporative	2,084	2.30	14.0%		
					Refueling	0	0.00	0.0%		
					Running Loss	2,269	2.50	15.2%		
					Resting Loss	1,130	1.25	7.6%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2002 Control Strategy**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,310,967	87.2%	14,757	81.7%	118,837	85.6%	16,934	77.2%
	LDGT1	628,339	3.6%	620	3.4%	5,422	3.9%	915	4.2%
	LDGT2	442,412	2.5%	453	2.5%	4,130	3.0%	721	3.3%
	HDGV	85,397	0.5%	234	1.3%	2,111	1.5%	428	1.9%
	LDDV	658,688	3.8%	362	2.0%	1,006	0.7%	869	4.0%
	LDDT	58,700	0.3%	41	0.2%	89	0.1%	95	0.4%
	HDDV	156,741	0.9%	271	1.5%	1,522	1.1%	1,785	8.1%
	MC	212,119	1.2%	1,322	7.3%	5,671	4.1%	185	0.8%
	Total	17,553,363		18,059		138,787		21,932	
			19.7	total tons:	19.91	152.99		24.18	
								w/ Phase II RFG NOx Credit	22.66
				kg	ton	pct.			
				Exhaust	11,596	12.78	64.2%		
				Evaporative	2,013	2.22	11.1%		
				Refueling	0	0.00	0.0%		
				Running Loss	3,250	3.58	18.0%		
				Resting Loss	1,200	1.32	6.6%		

**Area Total**

LDGV	67,477,778	87.4%		50,201	79.6%	408,544	84.5%	69,277	76.5%
LDGT1	2,718,937	3.5%		2,208	3.5%	19,436	4.0%	3,693	4.1%
LDGT2	1,903,618	2.5%		1,693	2.7%	15,506	3.2%	3,054	3.4%
HDGV	367,533	0.5%		850	1.3%	7,800	1.6%	1,846	2.0%
LDDV	2,902,206	3.8%		1,301	2.1%	3,681	0.8%	3,699	4.1%
LDDT	249,789	0.3%		143	0.2%	325	0.1%	385	0.4%
HDDV	669,588	0.9%		1,055	1.7%	5,924	1.2%	7,720	8.5%
MC	937,651	1.2%		5,616	8.9%	22,170	4.6%	920	1.0%
Total:	77,227,100		23.5	63,068		483,385		90,593	
			Total Tons:	69.52		532.84		99.86	
						w/ Phase II RFG NOx Credit		93.13	
				kg	tons	pct.			
			Exhaust	40,289	44.41	63.9%			
			Evaporative	8,202	9.04	13.0%			
			Refueling	0	0.00	0.0%			
			Running Loss	10,030	11.06	15.9%			
			Resting Loss	4,547	5.01	7.2%			

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Uncontrolled Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	13,925,924	87.6%		30,672	87.9%	201,803	88.1%	24,885	82.9%
	LDGT1	540,791	3.4%		1,216	3.5%	9,736	4.3%	1,321	4.4%
	LDGT2	377,676	2.4%		935	2.7%	7,755	3.4%	983	3.3%
	HDGV	74,142	0.5%		252	0.7%	1,755	0.8%	390	1.3%
	LDDV	598,722	3.8%		256	0.7%	769	0.3%	773	2.6%
	LDDT	48,523	0.3%		26	0.1%	62	0.0%	73	0.2%
	HDDV	132,568	0.8%		205	0.6%	1,185	0.5%	1,395	4.6%
	MC	194,007	1.2%		1,318	3.8%	6,006	2.6%	199	0.7%
	Total	15,892,353		22.0	34,880		229,071		30,019	
				total tons:	38.45		252.51		33.09	
				kg	ton	pct.				
				Exhaust	17,950	19.79	51.5%			
				Evaporative	3,908	4.31	11.2%			
				Refueling	0	0.00	0.0%			
				Running Loss	11,757	12.96	33.7%			
				Resting Loss	1,265	1.39	3.6%			
Chester	LDGV	12,300,302	86.6%		19,810	85.2%	128,969	85.7%	21,174	80.6%
	LDGT1	554,673	3.9%		992	4.3%	7,925	5.3%	1,328	5.1%
	LDGT2	387,487	2.7%		762	3.3%	6,388	4.2%	990	3.8%
	HDGV	74,724	0.5%		205	0.9%	1,473	1.0%	407	1.5%
	LDDV	529,766	3.7%		185	0.8%	542	0.4%	664	2.5%
	LDDT	51,166	0.4%		23	0.1%	54	0.0%	77	0.3%
	HDDV	135,780	1.0%		177	0.8%	1,007	0.7%	1,442	5.5%
	MC	170,462	1.2%		1,106	4.8%	4,136	2.7%	187	0.7%
	Total	14,204,360		29.9	23,259		150,493		26,267	
				total tons:	25.64		165.89		28.95	
				kg	ton	pct.				
				Exhaust	12,249	13.50	52.7%			
				Evaporative	3,375	3.72	14.5%			
				Refueling	0	0.00	0.0%			
				Running Loss	6,507	7.17	28.0%			
				Resting Loss	1,128	1.24	4.8%			



**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Uncontrolled Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	9,589,527	87.7%	20,435	87.9%	132,983	88.4%	15,213	83.1%
	LDGT1	365,103	3.3%	810	3.5%	6,426	4.3%	791	4.3%
	LDGT2	254,600	2.3%	589	2.5%	4,806	3.2%	563	3.1%
	HDGV	49,281	0.5%	167	0.7%	1,095	0.7%	245	1.3%
	LDDV	412,138	3.8%	180	0.8%	525	0.3%	465	2.5%
	LDDT	33,853	0.3%	19	0.1%	44	0.0%	45	0.2%
	HDDV	90,497	0.8%	150	0.6%	822	0.5%	856	4.7%
	MC	133,828	1.2%	896	3.9%	3,759	2.5%	121	0.7%
	Total	10,928,827		23,245		150,460		18,299	
			21.6	total tons:	25.62	165.85		20.17	
				kg	ton	pct.			
				Exhaust	11,836	13.05	50.9%		
				Evaporative	2,662	2.93	11.5%		
				Refueling	0	0.00	0.0%		
				Running Loss	7,877	8.68	33.9%		
				Resting Loss	870	0.96	3.7%		
Montgomery	LDGV	18,347,033	87.6%	34,239	86.7%	220,729	87.3%	29,831	82.5%
	LDGT1	710,307	3.4%	1,523	3.9%	11,898	4.7%	1,613	4.5%
	LDGT2	497,695	2.4%	1,132	2.9%	9,131	3.6%	1,175	3.3%
	HDGV	94,861	0.5%	304	0.8%	2,066	0.8%	487	1.3%
	LDDV	788,728	3.8%	316	0.8%	922	0.4%	934	2.6%
	LDDT	64,910	0.3%	35	0.1%	82	0.0%	92	0.3%
	HDDV	173,773	0.8%	274	0.7%	1,559	0.6%	1,755	4.9%
	MC	254,971	1.2%	1,677	4.2%	6,380	2.5%	251	0.7%
	Total	20,932,278		39,500		252,766		36,139	
			24.7	total tons:	43.54	278.62		39.84	
				kg	ton	pct.			
				Exhaust	20,307	22.38	51.4%		
				Evaporative	4,961	5.47	12.6%		
				Refueling	0	0.00	0.0%		
				Running Loss	12,564	13.85	31.8%		
				Resting Loss	1,668	1.84	4.2%		

VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE  
Philadelphia 5-County Area  
2005 Uncontrolled Baseline

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,485,387	87.2%	43,272	88.8%	293,761	89.1%	28,713	82.9%
	LDGT1	636,001	3.6%	1,728	3.5%	13,973	4.2%	1,625	4.7%
	LDGT2	447,874	2.5%	1,241	2.5%	10,381	3.1%	1,150	3.3%
	HDGV	86,440	0.5%	326	0.7%	2,170	0.7%	443	1.3%
	LDDV	666,201	3.8%	339	0.7%	986	0.3%	820	2.4%
	LDDT	59,409	0.3%	38	0.1%	86	0.0%	88	0.3%
	HDDV	158,652	0.9%	270	0.6%	1,532	0.5%	1,601	4.6%
	MC	214,544	1.2%	1,491	3.1%	6,755	2.0%	187	0.5%
	Total	17,754,508		48,705		329,646		34,626	
				19.6					
				total tons:	53.69	363.37		38.17	

	kg	ton	pct.
Exhaust	25,817	28.46	53.0%
Evaporative	4,866	5.36	10.0%
Refueling	0	0.00	0.0%
Running Loss	16,605	18.30	34.1%
Resting Loss	1,417	1.56	2.9%

Area Total

LDGV	69,648,173	87.4%	148,428	87.5%	978,245	87.9%	119,816	82.4%
LDGT1	2,806,875	3.5%	6,268	3.7%	49,959	4.5%	6,677	4.6%
LDGT2	1,965,332	2.5%	4,659	2.7%	38,462	3.5%	4,862	3.3%
HDGV	379,448	0.5%	1,254	0.7%	8,558	0.8%	1,972	1.4%
LDDV	2,995,555	3.8%	1,275	0.8%	3,743	0.3%	3,657	2.5%
LDDT	257,861	0.3%	141	0.1%	329	0.0%	374	0.3%
HDDV	691,270	0.9%	1,077	0.6%	6,105	0.5%	7,049	4.8%
MC	967,812	1.2%	6,488	3.8%	27,035	2.4%	945	0.6%
Total:	79,712,326		169,588		1,112,436		145,351	
				23.0				
				Total Tons:	186.94	1,226.24		160.22

	kg	tons	pct.
Exhaust	88,159	97.18	52.0%
Evaporative	19,772	21.79	11.7%
Refueling	0	0.00	0.0%
Running Loss	55,310	60.97	32.6%
Resting Loss	6,348	7.00	3.7%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Adjusted Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Bucks	LDGV	11,256,289	87.6%	21,364	87.1%	147,320	87.7%	20,401	82.8%
	LDGT1	439,011	3.4%	898	3.7%	7,457	4.4%	1,096	4.4%
	LDGT2	306,774	2.4%	688	2.8%	5,963	3.6%	816	3.3%
	HDGV	60,203	0.5%	184	0.8%	1,326	0.8%	321	1.3%
	LDDV	483,922	3.8%	192	0.8%	561	0.3%	627	2.5%
	LDDT	39,400	0.3%	20	0.1%	47	0.0%	60	0.2%
	HDDV	107,653	0.8%	156	0.6%	888	0.5%	1,150	4.7%
	MC	156,796	1.2%	1,029	4.2%	4,339	2.6%	167	0.7%
	Total	12,850,048		26.4		167,901		24,636	
			total tons:	27.04		185.08		27.16	
				kg	ton	pct.			
				Exhaust	13,161	14.51	53.7%		
				Evaporative	3,160	3.48	12.9%		
				Refueling	0	0.00	0.0%		
				Running Loss	7,188	7.92	29.3%		
				Resting Loss	1,022	1.13	4.2%		
Chester	LDGV	8,783,345	86.6%	13,047	84.5%	89,121	85.3%	15,732	80.5%
	LDGT1	398,456	3.9%	683	4.4%	5,640	5.4%	994	5.1%
	LDGT2	278,221	2.7%	524	3.4%	4,564	4.4%	742	3.8%
	HDGV	53,668	0.5%	139	0.9%	1,042	1.0%	297	1.5%
	LDDV	378,292	3.7%	124	0.8%	366	0.4%	495	2.5%
	LDDT	36,723	0.4%	16	0.1%	38	0.0%	57	0.3%
	HDDV	97,484	1.0%	121	0.8%	699	0.7%	1,080	5.5%
	MC	121,675	1.2%	784	5.1%	2,981	2.9%	141	0.7%
	Total	10,147,864		33.8		104,453		19,538	
			total tons:	17.02		115.14		21.54	
				kg	ton	pct.			
				Exhaust	8,394	9.25	54.4%		
				Evaporative	2,411	2.66	15.6%		
				Refueling	0	0.00	0.0%		
				Running Loss	3,828	4.22	24.8%		
				Resting Loss	806	0.89	5.2%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Adjusted Baseline**

County		VMT		Speed (mph)	VOC		CO		NOx	
		Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	7,298,370	88.2%		14,554	87.9%	98,343	88.4%	12,050	83.5%
	LDGT1	260,358	3.1%		562	3.4%	4,689	4.2%	607	4.2%
	LDGT2	181,359	2.2%		408	2.5%	3,521	3.2%	432	3.0%
	HDGV	34,920	0.4%		113	0.7%	790	0.7%	178	1.2%
	LDDV	313,605	3.8%		130	0.8%	381	0.3%	371	2.6%
	LDDT	24,222	0.3%		13	0.1%	31	0.0%	35	0.2%
	HDDV	64,385	0.8%		103	0.6%	579	0.5%	667	4.6%
	MC	101,825	1.2%		676	4.1%	2,863	2.6%	98	0.7%
	Total	8,279,044		23.7	16,560		111,196		14,438	
				total tons:	18.25		122.57		15.91	

	kg	ton	pct.
Exhaust	8,626	9.51	52.1%
Evaporative	2,017	2.22	12.2%
Refueling	0	0.00	0.0%
Running Loss	5,257	5.79	31.7%
Resting Loss	660	0.73	4.0%

Montgomery	LDGV	14,770,267	87.7%		26,083	86.4%	175,077	87.1%	25,083	82.4%
	LDGT1	566,593	3.4%		1,175	3.9%	9,606	4.8%	1,371	4.5%
	LDGT2	396,975	2.4%		873	2.9%	7,394	3.7%	999	3.3%
	HDGV	75,639	0.4%		231	0.8%	1,643	0.8%	397	1.3%
	LDDV	634,947	3.8%		243	0.8%	713	0.4%	788	2.6%
	LDDT	51,741	0.3%		27	0.1%	64	0.0%	79	0.3%
	HDDV	138,570	0.8%		210	0.7%	1,213	0.6%	1,491	4.9%
	MC	205,237	1.2%		1,348	4.5%	5,292	2.6%	215	0.7%
	Total	16,839,969		26.8	30,189		201,003		30,423	
				total tons:	33.28		221.57		33.53	

	kg	ton	pct.
Exhaust	15,935	17.57	52.8%
Evaporative	3,991	4.40	13.2%
Refueling	0	0.00	0.0%
Running Loss	8,920	9.83	29.5%
Resting Loss	1,342	1.48	4.4%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Adjusted Baseline**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	14,388,104	87.3%						
	LDGT1	586,141	3.6%	38,204	88.7%	262,736	89.1%	27,180	82.9%
	LDGT2	412,431	2.5%	1,538	3.6%	12,517	4.2%	1,550	4.7%
	HDGV	79,590	0.5%	1,103	2.6%	9,299	3.2%	1,097	3.3%
	LDDV	618,960	3.8%	289	0.7%	1,962	0.7%	415	1.3%
	LDDT	54,756	0.3%	303	0.7%	880	0.3%	769	2.3%
	HDDV	146,110	0.9%	34	0.1%	77	0.0%	83	0.3%
	MC	199,372	1.2%	240	0.6%	1,371	0.5%	1,515	4.6%
	Total	16,485,464		1,369	3.2%	6,005	2.0%	180	0.5%
				20.7					
				total tons:	43,080	294,847		32,789	
					47.49	325.01		36.14	

	kg	ton	pct.
Exhaust	23,135	25.50	53.7%
Evaporative	4,518	4.98	10.5%
Refueling	0	0.00	0.0%
Running Loss	14,111	15.55	32.8%
Resting Loss	1,316	1.45	3.1%

**Area Total**

LDGV	56,496,375	87.5%	113,251	87.3%	772,597	87.9%	100,446	82.5%
LDGT1	2,250,559	3.5%	4,855	3.7%	39,910	4.5%	5,618	4.6%
LDGT2	1,575,760	2.4%	3,596	2.8%	30,742	3.5%	4,085	3.4%
HDGV	304,020	0.5%	956	0.7%	6,762	0.8%	1,609	1.3%
LDDV	2,429,726	3.8%	992	0.8%	2,901	0.3%	3,050	2.5%
LDDT	206,842	0.3%	109	0.1%	257	0.0%	314	0.3%
HDDV	554,202	0.9%	831	0.6%	4,750	0.5%	5,902	4.8%
MC	784,905	1.2%	5,206	4.0%	21,481	2.4%	801	0.7%
Total:	64,602,389		25.2		129,797		121,824	
				Total Tons:	143.08	969.36	134.29	

	kg	tons	pct.
Exhaust	69,251	76.33	53.4%
Evaporative	16,097	17.74	12.4%
Refueling	0	0.00	0.0%
Running Loss	39,304	43.32	30.3%
Resting Loss	5,146	5.67	4.0%

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Control Strategy**

County	VMT		Speed (mph)	VOC		CO		NOx		
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.	
Bucks	LDGV	13,925,924	87.6%		8,864	77.9%	80,016	84.3%	13,555	77.3%
	LDGT1	540,791	3.4%		376	3.3%	3,452	3.6%	682	3.9%
	LDGT2	377,676	2.4%		307	2.7%	2,936	3.1%	593	3.4%
	HDGV	74,142	0.5%		153	1.3%	1,301	1.4%	349	2.0%
	LDDV	598,722	3.8%		256	2.3%	769	0.8%	773	4.4%
	LDDT	48,523	0.3%		26	0.2%	62	0.1%	73	0.4%
	HDDV	132,568	0.8%		205	1.8%	1,184	1.2%	1,301	7.4%
	MC	194,007	1.2%		1,183	10.4%	5,144	5.4%	199	1.1%
	Total	15,892,353		22.0	11,371		94,864		17,525	
				total tons:	12.53		104.57		19.32	
						w/ Phase II RFG NOx Credit		17.88		
				kg	ton	pct.				
			Exhaust		7,744	8.54	68.1%			
			Evaporative		1,416	1.56	12.5%			
			Refueling		0	0.00	0.0%			
			Running Loss		1,533	1.69	13.5%			
			Resting Loss		677	0.75	6.0%			
Chester	LDGV	12,300,302	86.6%		5,951	74.2%	52,009	81.8%	11,464	74.5%
	LDGT1	554,673	3.9%		313	3.9%	2,838	4.5%	683	4.4%
	LDGT2	387,487	2.7%		258	3.2%	2,455	3.9%	602	3.9%
	HDGV	74,724	0.5%		123	1.5%	1,091	1.7%	364	2.4%
	LDDV	529,766	3.7%		185	2.3%	542	0.9%	664	4.3%
	LDDT	51,166	0.4%		23	0.3%	54	0.1%	77	0.5%
	HDDV	135,780	1.0%		177	2.2%	1,006	1.6%	1,345	8.7%
	MC	170,462	1.2%		989	12.3%	3,549	5.6%	186	1.2%
	Total	14,204,360		29.9	8,017		63,544		15,384	
				total tons:	8.84		70.04		16.96	
						w/ Phase II RFG NOx Credit		15.71		
				kg	ton	pct.				
			Exhaust		5,339	5.89	66.6%			
			Evaporative		1,246	1.37	15.5%			
			Refueling		0	0.00	0.0%			
			Running Loss		859	0.95	10.7%			
			Resting Loss		573	0.63	7.1%			

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
**Philadelphia 5-County Area**

**2005 Control Strategy**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Delaware	LDGV	9,589,527	87.7%	5,896	77.6%	52,913	84.7%	8,188	77.4%
	LDGT1	365,103	3.3%	249	3.3%	2,281	3.7%	405	3.8%
	LDGT2	254,600	2.3%	196	2.6%	1,872	3.0%	343	3.2%
	HDGV	49,281	0.5%	102	1.3%	807	1.3%	219	2.1%
	LDDV	412,138	3.8%	180	2.4%	525	0.8%	465	4.4%
	LDDT	33,853	0.3%	19	0.3%	44	0.1%	45	0.4%
	HDDV	90,497	0.8%	150	2.0%	822	1.3%	799	7.5%
	MC	133,828	1.2%	804	10.6%	3,218	5.1%	121	1.1%
	Total	10,928,827		7,596		62,481		10,584	
			21.6	total tons:	8.37	68.87		11.67	
								w/ Phase II RFG NOx Credit	10.77
				kg	ton	pct.			
				Exhaust	5,094	5.62	67.1%		
				Evaporative	956	1.05	12.6%		
				Refueling	0	0.00	0.0%		
				Running Loss	1,081	1.19	14.2%		
				Resting Loss	465	0.51	6.1%		
Montgomery	LDGV	18,347,033	87.6%	10,008	76.0%	88,951	83.7%	16,106	76.7%
	LDGT1	710,307	3.4%	470	3.6%	4,236	4.0%	828	3.9%
	LDGT2	497,695	2.4%	376	2.9%	3,532	3.3%	716	3.4%
	HDGV	94,861	0.5%	183	1.4%	1,518	1.4%	433	2.1%
	LDDV	788,728	3.8%	316	2.4%	922	0.9%	934	4.4%
	LDDT	64,910	0.3%	35	0.3%	82	0.1%	92	0.4%
	HDDV	173,773	0.8%	274	2.1%	1,557	1.5%	1,638	7.8%
	MC	254,971	1.2%	1,503	11.4%	5,467	5.1%	250	1.2%
	Total	20,932,278		13,164		106,265		20,998	
			24.7	total tons:	14.51	117.14		23.15	
								w/ Phase II RFG NOx Credit	21.36
				kg	ton	pct.			
				Exhaust	8,795	9.69	66.8%		
				Evaporative	1,836	2.02	13.9%		
				Refueling	0	0.00	0.0%		
				Running Loss	1,681	1.85	12.8%		
				Resting Loss	852	0.94	6.5%		

**VMT, VOC, CO, AND NOX INVENTORY AND FORECAST BY COUNTY BY VEHICLE TYPE**  
Philadelphia 5-County Area

**2005 Control Strategy**

County	VMT		Speed (mph)	VOC		CO		NOx	
	Miles	Pct.		Kilograms	Pct.	Kilograms	Pct.	Kilograms	Pct.
Philadelphia	LDGV	15,485,387	87.2%						
	LDGT1	636,001	3.6%	12,750	80.3%	111,289	85.7%	15,741	77.7%
	LDGT2	447,874	2.5%	536	3.4%	4,800	3.7%	842	4.2%
	HDGV	86,440	0.5%	404	2.5%	3,829	2.9%	684	3.4%
	LDDV	666,201	3.8%	202	1.3%	1,608	1.2%	402	2.0%
	LDDT	59,409	0.3%	339	2.1%	986	0.8%	820	4.0%
	HDDV	158,652	0.9%	38	0.2%	86	0.1%	88	0.4%
	HDDV	158,652	0.9%	270	1.7%	1,530	1.2%	1,493	7.4%
	MC	214,544	1.2%	1,339	8.4%	5,777	4.4%	186	0.9%
	Total	17,754,508		15,879		129,906		20,256	
				19.6					
				total tons:	17.50	143.20		22.33	
				w/ Phase II RFG NOx Credit				20.70	
				kg	ton	pct.			
				Exhaust	10,830	11.94	68.2%		
				Evaporative	1,721	1.90	10.8%		
				Refueling	0	0.00	0.0%		
				Running Loss	2,440	2.69	15.4%		
				Resting Loss	888	0.98	5.6%		

**Area Total**

LDGV	69,648,173	87.4%		43,468	77.6%	385,178	84.3%	65,053	76.8%
LDGT1	2,806,875	3.5%		1,944	3.5%	17,607	3.9%	3,441	4.1%
LDGT2	1,965,332	2.5%		1,541	2.8%	14,623	3.2%	2,937	3.5%
HDGV	379,448	0.5%		762	1.4%	6,326	1.4%	1,768	2.1%
LDDV	2,995,555	3.8%		1,275	2.3%	3,743	0.8%	3,657	4.3%
LDDT	257,861	0.3%		141	0.3%	329	0.1%	374	0.4%
HDDV	691,270	0.9%		1,077	1.9%	6,099	1.3%	6,576	7.8%
MC	967,812	1.2%		5,818	10.4%	23,155	5.1%	942	1.1%
Total:	79,712,326		23.0	56,027		457,060		84,748	
				Total Tons:	61.76	503.82		93.42	
				w/ Phase II RFG NOx Credit				86.42	
				kg	tons	pct.			
				Exhaust	37,803	41.67	67.5%		
				Evaporative	7,176	7.91	12.8%		
				Refueling	0	0.00	0.0%		
				Running Loss	7,594	8.37	13.6%		
				Resting Loss	3,455	3.81	6.2%		



**Philadelphia 5-County Area MOBILE Input Files**  
**1999 Control Strategy Scenario**

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**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Bucks County, 1999 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag

.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: buckage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 99 56.1 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 99 56.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.857.043.030.006.037.004.011.012
4 99 54.2 90.8 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.888.028.020.004.038.003.007.012
4 99 55.9 94.2 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.844.050.035.007.036.004.012.012
4 99 58.9 80.0 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.860.042.029.006.037.004.010.012
4 99 48.0 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.872.036.025.005.038.003.009.012

```

```

4 99 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.916.015.010.002.039.001.004.013

```

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Bucks County, 1999 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag

.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: buckage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 99 56.1 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 99 56.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy

99 1 1  
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.857.043.030.006.037.004.011.012  
4 99 54.2 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.888.028.020.004.038.003.007.012  
4 99 55.9 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012  
4 99 58.9 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.860.042.029.006.037.004.010.012  
4 99 48.0 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.872.036.025.005.038.003.009.012

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4 99 11.2 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.916.015.010.002.039.001.004.013

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]

**Chester County, 1999 Control Strategy w/o Gas Cap Pressure Check**

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 99 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 99 65.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

## 1999 Control Strategy

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5

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Chester County, 1999 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 99 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 99 65.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge



Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy

99 1 1  
[A 151F 1T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.794.074.052.010.034.007.018.011  
4 99 64.9 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.824.059.041.008.036.005.015.012  
4 99 64.9 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.811.066.046.009.035.006.016.011  
4 99 65.0 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.733.104.073.014.031.009.026.010  
4 99 54.1 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 151F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012

4 99 11.3 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 153F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.902.021.015.003.039.002.005.013

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]

Delaware County, 1999 Control Strategy w/o Gas Cap Pressure Check

1 tamflg  
1 spdfldg  
2 vmflag  
3 mymrfg  
2 newflg  
32 imflag

1 alhflg  
8 atpflg  
5 rlflag  
1 locflg -- Must be 1  
1 temflg  
3 outfmt -- Must be 3; Overridden by PPAQ1  
4 prtflg  
1 idlflg  
3 nmhflg  
3 hcflag

.065	.093	.084	.083	.087	.087	.089	.084	.071	.060
.038	.027	.023	.021	.023	.017	.012	.008	.004	.004
.004	.003	.002	.002	.008					
.043	.061	.069	.068	.083	.087	.091	.103	.068	.060
.040	.030	.027	.024	.040	.029	.022	.014	.008	.008
.007	.005	.004	.003	.007					
.053	.076	.068	.092	.106	.093	.073	.089	.063	.052
.033	.024	.018	.021	.039	.027	.018	.011	.008	.008
.011	.005	.003	.003	.006					
.026	.042	.043	.061	.084	.094	.078	.081	.069	.048
.032	.028	.027	.036	.047	.035	.026	.017	.023	.021
.024	.014	.012	.011	.018					
.065	.093	.084	.083	.087	.087	.089	.084	.071	.060
.038	.027	.023	.021	.023	.017	.012	.008	.004	.004
.004	.003	.002	.002	.008					
.043	.061	.069	.068	.083	.087	.091	.103	.068	.060
.040	.030	.027	.024	.040	.029	.022	.014	.008	.008
.007	.005	.004	.003	.007					
.034	.067	.067	.067	.067	.073	.061	.040	.041	.051
.053	.066	.055	.057	.045	.019	.023	.028	.024	.016
.011	.009	.007	.005	.016					
.034	.056	.043	.035	.045	.042	.054	.078	.066	.052
.067	.428	.000	.000	.000	.000	.000	.000	.000	.000
.000	.000	.000	.000	.000					

\* Distribution by Vehicle  
\* County:Delaware  
\* Filename: delaage.d

004

1 7 3 90 90 05.639 00.000  
1 7 3 91 97 04.598 00.000  
1 7 3 98 03 03.679 00.000  
1 7 3 04 20 01.840 00.000  
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.  
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00  
98 75 20 2221 11 096. 22212222  
98 81 20 2221 11 096.  
98 81 20 2221 11 096.  
4 99 55.0 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.849.047.033.006.037.004.012.012  
4 99 54.8 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy

99 1 1  
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.847.048.033.007.037.004.012.012  
4 99 52.6 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.883.031.022.004.038.003.007.012  
4 99 54.7 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.832.055.039.007.036.005.014.012  
4 99 58.6 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.852.046.032.006.037.004.011.012  
4 99 44.6 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.926.010.007.001.040.001.002.013

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4 99 11.4 80.0 20.6 27.3 20.6 7

99 1 1  
[A 233F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.903.021.014.003.039.002.005.013

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Delaware County, 1999 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.053 .076 .068 .092 .106 .093 .073 .089 .063 .052
.033 .024 .018 .021 .039 .027 .018 .011 .008 .008
.011 .005 .003 .003 .006
.026 .042 .043 .061 .084 .094 .078 .081 .069 .048
.032 .028 .027 .036 .047 .035 .026 .017 .023 .021
.024 .014 .012 .011 .018
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.034 .056 .043 .035 .045 .042 .054 .078 .066 .052
.067 .428 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County: Delaware  
\* Filename: delagee.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 99 55.0 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.849.047.033.006.037.004.012.012
4 99 54.8 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.847.048.033.007.037.004.012.012
4 99 52.6 90.8 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.883.031.022.004.038.003.007.012
4 99 54.7 94.2 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.832.055.039.007.036.005.014.012
4 99 58.6 80.0 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.852.046.032.006.037.004.011.012
4 99 44.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.926.010.007.001.040.001.002.013

```

Page 1-12

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Montgomery County, 1999 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.046 .058 .064 .085 .115 .097 .080 .095 .072 .050
.032 .024 .021 .023 .038 .029 .020 .010 .009 .008
.009 .006 .004 .003 .004
.025 .038 .049 .066 .089 .098 .087 .089 .064 .053
.031 .030 .029 .034 .041 .029 .026 .015 .019 .018
.020 .015 .010 .009 .017
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .050 .038 .040 .042 .036 .050 .075 .074 .052
.067 .437 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 99 54.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.866.039.027.005.037.004.010.012
4 99 54.4 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.865.039.028.005.037.004.010.012
4 99 52.0 90.8 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.891.026.019.004.038.003.006.013
4 99 54.3 94.2 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.853.045.032.006.037.004.011.012
4 99 58.5 80.0 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.867.038.027.005.037.004.010.012
4 99 47.3 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.887.029.020.004.038.003.007.012

```

Page 1-14

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Montgomery County, 1999 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.046 .058 .064 .085 .115 .097 .080 .095 .072 .050
.032 .024 .021 .023 .038 .029 .020 .010 .009 .008
.009 .006 .004 .003 .004
.025 .038 .049 .066 .089 .098 .087 .089 .064 .053
.031 .030 .029 .034 .041 .029 .026 .015 .019 .018
.020 .015 .010 .009 .017
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .050 .038 .040 .042 .036 .050 .075 .074 .052
.067 .437 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 99 54.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.866.039.027.005.037.004.010.012
4 99 54.4 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge



Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy

99 1 1  
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.865.039.028.005.037.004.010.012  
4 99 52.0 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.891.026.019.004.038.003.006.013  
4 99 54.3 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.853.045.032.006.037.004.011.012  
4 99 58.5 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.867.038.027.005.037.004.010.012  
4 99 47.3 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.887.029.020.004.038.003.007.012

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4 99 11.7 80.0 20.6 27.3 20.6 7

99 1 1  
[A 463F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.873.036.025.005.037.003.009.012

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Philadelphia County, 1999 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.027 .059 .052 .076 .076 .082 .081 .092 .069 .052
.037 .035 .032 .031 .046 .044 .024 .015 .012 .017
.014 .009 .005 .003 .007
.016 .036 .033 .041 .065 .074 .096 .076 .072 .048
.044 .042 .034 .038 .052 .026 .022 .025 .042 .029
.024 .016 .015 .020 .010
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .051 .032 .039 .040 .042 .066 .076 .081 .055
.062 .417 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County: Philadelphia  
\* Filename: philage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 99 48.5 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.814.064.045.009.035.006.016.011
4 99 53.5 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.837.053.037.007.036.005.013.012
4 99 36.4 90.8 20.6 27.3 20.6 7
99 1 1
[A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.851.046.032.006.037.004.012.012
4 99 48.4 94.2 20.6 27.3 20.6 7
99 1 1
[A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.829.057.040.008.036.005.014.011
4 99 63.6 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.738.101.071.014.032.009.025.010
4 99 59.2 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F12T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.896.025.017.003.039.002.006.012

```

```
4 99 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013
```

**Philadelphia 5-County Area MOBILE Input Files  
1999 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Philadelphia County, 1999 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.027 .059 .052 .076 .076 .082 .081 .092 .069 .052
.037 .035 .032 .031 .046 .044 .024 .015 .012 .017
.014 .009 .005 .003 .007
.016 .036 .033 .041 .065 .074 .096 .076 .072 .048
.044 .042 .034 .038 .052 .026 .022 .025 .042 .029
.024 .016 .015 .020 .010
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .051 .032 .039 .040 .042 .066 .076 .081 .055
.062 .417 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Philadelphia  
\* Filename: philage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 99 48.5 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.814.064.045.009.035.006.016.011
4 99 53.5 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[ A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.837.053.037.007.036.005.013.012
4 99 36.4 90.8 20.6 27.3 20.6 7
99 1 1
[ A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.851.046.032.006.037.004.012.012
4 99 48.4 94.2 20.6 27.3 20.6 7
99 1 1
[ A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.829.057.040.008.036.005.014.011
4 99 63.6 80.0 20.6 27.3 20.6 7
99 1 1
[ A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.738.101.071.014.032.009.025.010
4 99 59.2 87.7 20.6 27.3 20.6 7
99 1 1
[ A 673F12T 24HR ] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.896.025.017.003.039.002.006.012

```

```

4 99 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy Scenario**

---

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Bucks County, 2002 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag

.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: Buckage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 2 55.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 2 55.7 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy

99 1 1  
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.857.043.030.006.037.004.011.012  
4 2 53.8 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.888.028.020.004.038.003.007.012  
4 2 55.7 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012  
4 2 58.8 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.860.042.029.006.037.004.010.012  
4 2 47.8 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.872.036.025.005.038.003.009.012

4 2 11.0 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.916.015.010.002.039.001.004.013



**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Bucks County, 2002 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflg
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000
004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 2 55.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 2 55.7 84.8 20.6 27.3 20.6 7

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: buckage.d

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

```

99 1 1
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.857.043.030.006.037.004.011.012
4 2 53.8 90.8 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.888.028.020.004.038.003.007.012
4 2 55.7 94.2 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.844.050.035.007.036.004.012.012
4 2 58.8 80.0 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.860.042.029.006.037.004.010.012
4 2 47.8 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.872.036.025.005.038.003.009.012

```

```

4 2 11.0 80.0 20.6 27.3 20.6 7
99 1 1
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.916.015.010.002.039.001.004.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Chester County, 2002 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 2 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 2 65.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy

99 1 1  
[A 151F 1T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.794.074.052.010.034.007.018.011  
4 2 64.8 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.824.059.041.008.036.005.015.012  
4 2 64.9 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.811.066.046.009.035.006.016.011  
4 2 65.0 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.733.104.073.014.031.009.026.010  
4 2 53.4 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 151F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012  
4 2 53.1 84.8 20.6 27.3 20.6 7

4 2 11.1 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 153F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.902.021.015.003.039.002.005.013

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

**Chester County, 2002 Control Strategy w/ Gas Cap Pressure Check**

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag

```

```

.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 2 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 2 65.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy

99 1 1  
[A 151F 1T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.794.074.052.010.034.007.018.011  
4 2 64.8 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.824.059.041.008.036.005.015.012  
4 2 64.9 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.811.066.046.009.035.006.016.011  
4 2 65.0 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 151F 1T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.733.104.073.014.031.009.026.010  
4 2 53.4 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 151F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012

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4 2 11.1 80.0 20.6 27.3 20.6 7

99 1 1

[A 153F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.902.021.015.003.039.002.005.013

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Delaware County, 2002 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.053 .076 .068 .092 .106 .093 .073 .089 .063 .052
.033 .024 .018 .021 .039 .027 .018 .011 .008 .008
.011 .005 .003 .003 .006
.026 .042 .043 .061 .084 .094 .078 .081 .069 .048
.032 .028 .027 .036 .047 .035 .026 .017 .023 .021
.024 .014 .012 .011 .018
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.034 .056 .043 .035 .045 .042 .054 .078 .066 .052
.067 .428 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Delaware  
\* Filename: delaage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 2 54.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.849.047.033.006.037.004.012.012
4 2 54.5 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.847.048.033.007.037.004.012.012
4 2 52.1 90.8 20.6 27.3 20.6 7

99 1 1
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.883.031.022.004.038.003.007.012
4 2 54.4 94.2 20.6 27.3 20.6 7

99 1 1
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.832.055.039.007.036.005.014.012
4 2 58.5 80.0 20.6 27.3 20.6 7

99 1 1
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.852.046.032.006.037.004.011.012
4 2 44.2 87.7 20.6 27.3 20.6 7

99 1 1
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.926.010.007.001.040.001.002.013

```

```

4 2 11.3 80.0 20.6 27.3 20.6 7
99 1 1
[A 233F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```



**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

**Delaware County, 2002 Control Strategy w/ Gas Cap Pressure Check**

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.053 .076 .068 .092 .106 .093 .073 .089 .063 .052
.033 .024 .018 .021 .039 .027 .018 .011 .008 .008
.011 .005 .003 .003 .006
.026 .042 .043 .061 .084 .094 .078 .081 .069 .048
.032 .028 .027 .036 .047 .035 .026 .017 .023 .021
.024 .014 .012 .011 .018
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.034 .056 .043 .035 .045 .042 .054 .078 .066 .052
.067 .428 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Delaware  
\* Filename: delaage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 2 54.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.849.047.033.006.037.004.012.012
4 2 54.5 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Outpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.847.048.033.007.037.004.012.012
4 2 52.1 90.8 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.883.031.022.004.038.003.007.012
4 2 54.4 94.2 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.832.055.039.007.036.005.014.012
4 2 58.5 80.0 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.852.046.032.006.037.004.011.012
4 2 44.2 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.926.010.007.001.040.001.002.013

```

Page 2-12

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]

Montgomery County, 2002 Control Strategy w/o Gas Cap Pressure Check

1 tamflg  
1 spdfld  
2 vmflag  
3 mymrfg  
2 newflg  
32 imflag  
1 alhflg  
8 atpflg  
5 rlflag  
1 locflg -- Must be 1  
1 temflg  
3 outfmlt -- Must be 3; Overridden by PPAQ1  
4 prtflg  
1 idlflg  
3 nmhflg  
3 hcflg

.052 .087 .086 .093 .095 .095 .097 .088 .071 .058  
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003  
.004 .003 .002 .003 .010  
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059  
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008  
.006 .006 .004 .004 .008  
.046 .058 .064 .085 .115 .097 .080 .095 .072 .050  
.032 .024 .021 .023 .038 .029 .020 .010 .009 .008  
.009 .006 .004 .003 .004  
.025 .038 .049 .066 .089 .098 .087 .089 .064 .053  
.031 .030 .029 .034 .041 .029 .026 .015 .019 .018  
.020 .015 .010 .009 .017  
.052 .087 .086 .093 .095 .097 .088 .071 .058  
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003  
.004 .003 .002 .003 .010  
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059  
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008  
.006 .006 .004 .004 .008  
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051  
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016  
.011 .009 .007 .005 .016  
.039 .050 .038 .040 .042 .036 .050 .075 .074 .052  
.067 .437 .000 .000 .000 .000 .000 .000 .000 .000  
.000 .000 .000 .000 .000

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

004

1 7 3 90 90 05.639 00.000  
1 7 3 91 97 04.598 00.000  
1 7 3 98 03 03.679 00.000  
1 7 3 04 20 01.840 00.000  
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.  
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00  
98 75 20 2221 11 096. 22212222  
98 81 20 2221 11 096.  
98 81 20 2221 11 096.  
4 2 54.3 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.866.039.027.005.037.004.010.012  
4 2 54.0 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.865.039.028.005.037.004.010.012
4 2 51.5 90.8 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.891.026.019.004.038.003.006.013
4 2 54.0 94.2 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.853.045.032.006.037.004.011.012
4 2 58.4 80.0 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.867.038.027.005.037.004.010.012
4 2 47.1 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.887.029.020.004.038.003.007.012

```

```

4 2 11.6 80.0 20.6 27.3 20.6 7
99 1 1
[A 463F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.873.036.025.005.037.003.009.012

```

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

Montgomery County, 2002 Control Strategy w/ Gas Cap Pressure Check

1 tamflg  
1 spdfld  
2 vmflag  
3 mymrfg  
2 newflg  
32 imflag  
1 alhflg  
8 atpflg  
5 rlflag  
1 locflg -- Must be 1  
1 temflg  
3 outfmt -- Must be 3; Overridden by PPAQ1  
4 prtflg  
1 idlflg  
3 nmhflg  
3 hcflg

.052	.087	.086	.093	.095	.095	.097	.088	.071	.058
.035	.025	.020	.018	.020	.015	.010	.006	.004	.003
.004	.003	.002	.003	.010					
.041	.059	.059	.071	.089	.090	.091	.101	.072	.059
.041	.030	.026	.024	.038	.030	.022	.014	.008	.008
.006	.006	.004	.004	.008					
.046	.058	.064	.085	.115	.097	.080	.095	.072	.050
.032	.024	.021	.023	.038	.029	.020	.010	.009	.008
.009	.006	.004	.003	.004					
.025	.038	.049	.066	.089	.098	.087	.089	.064	.053
.031	.030	.029	.034	.041	.029	.026	.015	.019	.018
.020	.015	.010	.009	.017					
.052	.087	.086	.093	.095	.095	.097	.088	.071	.058
.035	.025	.020	.018	.020	.015	.010	.006	.004	.003
.004	.003	.002	.003	.010					
.041	.059	.059	.071	.089	.090	.091	.101	.072	.059
.041	.030	.026	.024	.038	.030	.022	.014	.008	.008
.006	.006	.004	.004	.008					
.034	.067	.067	.067	.067	.073	.061	.040	.041	.051
.053	.066	.055	.057	.045	.019	.023	.028	.024	.016
.011	.009	.007	.005	.016					
.039	.050	.038	.040	.042	.036	.050	.075	.074	.052
.067	.437	.000	.000	.000	.000	.000	.000	.000	.000
.000	.000	.000	.000	.000					

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

004

1 7 3 90 90 05.639 00.000  
1 7 3 91 97 04.598 00.000  
1 7 3 98 03 03.679 00.000  
1 7 3 04 20 01.840 00.000  
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.  
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00  
98 75 20 2221 11 096. 22212222  
98 75 20 2221 11 096.  
98 81 20 2221 11 096.  
4 2 54.3 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.866.039.027.005.037.004.010.012  
4 2 54.0 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy

99 1 1  
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.865.039.028.005.037.004.010.012  
4 2 51.5 90.8 20.6 27.3 20.6 7

99 1 1  
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.891.026.019.004.038.003.006.013  
4 2 54.0 94.2 20.6 27.3 20.6 7

99 1 1  
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.853.045.032.006.037.004.011.012  
4 2 58.4 80.0 20.6 27.3 20.6 7

99 1 1  
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.867.038.027.005.037.004.010.012  
4 2 47.1 87.7 20.6 27.3 20.6 7

99 1 1  
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.887.029.020.004.038.003.007.012

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4 2 11.6 80.0 20.6 27.3 20.6 7

99 1 1  
[A 463F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.873.036.025.005.037.003.009.012

**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Philadelphia County, 2002 Conrtol Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfnt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.027 .059 .052 .076 .076 .082 .081 .092 .069 .052
.037 .035 .032 .031 .046 .044 .024 .015 .012 .017
.014 .009 .005 .003 .007
.016 .036 .033 .041 .065 .074 .096 .076 .072 .048
.044 .042 .034 .038 .052 .026 .022 .025 .042 .029
.024 .016 .015 .020 .010
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .051 .032 .039 .040 .042 .066 .076 .081 .055
.062 .417 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County: Philadelphia  
\* Filename: philage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 2 47.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.814.064.045.009.035.006.016.011
4 2 52.9 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.837.053.037.007.036.005.013.012
4 2 35.2 90.8 20.6 27.3 20.6 7
99 1 1
[A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.851.046.032.006.037.004.012.012
4 2 47.5 94.2 20.6 27.3 20.6 7
99 1 1
[A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.829.057.040.008.036.005.014.011
4 2 63.5 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.738.101.071.014.032.009.025.010
4 2 58.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F12T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.896.025.017.003.039.002.006.012

```

[illegible]

Page 2-18



**Philadelphia 5-County Area MOBILE Input Files  
2002 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

**Philadelphia County, 2002 Control Strategy w/ Gas Cap Pressure Check**

1 tamflg  
1 spdflg  
2 vmflag  
3 mymrfg  
2 newflg  
32 imflag  
1 alhflg  
8 atpflg  
5 rlflag  
1 locflg -- Must be 1  
1 temflg  
3 outfmt -- Must be 3; Overridden by PPAQ1  
4 prtflg  
1 idlflg  
3 nmhflg  
3 hcflag

.037	.054	.056	.064	.070	.080	.085	.088	.081	.077
.053	.042	.038	.035	.038	.031	.023	.014	.007	.006
.005	.004	.003	.003	.006					
.024	.039	.043	.051	.062	.070	.076	.092	.072	.066
.052	.040	.036	.039	.058	.046	.035	.023	.016	.015
.011	.008	.006	.007	.011					
.027	.059	.052	.076	.076	.082	.081	.092	.069	.052
.037	.035	.032	.031	.046	.044	.024	.015	.012	.017
.014	.009	.005	.003	.007					
.016	.036	.033	.041	.065	.074	.096	.076	.072	.048
.044	.042	.034	.038	.052	.026	.022	.025	.042	.029
.024	.016	.015	.020	.010					
.037	.054	.056	.064	.070	.080	.085	.088	.081	.077
.053	.042	.038	.035	.038	.031	.023	.014	.007	.006
.005	.004	.003	.003	.006					
.024	.039	.043	.051	.062	.070	.076	.092	.072	.066
.052	.040	.036	.039	.058	.046	.035	.023	.016	.015
.011	.008	.006	.007	.011					
.034	.067	.067	.067	.067	.073	.061	.040	.041	.051
.053	.066	.055	.057	.045	.019	.023	.028	.024	.016
.011	.009	.007	.005	.016					
.039	.051	.032	.039	.040	.042	.066	.076	.081	.055
.062	.417	.000	.000	.000	.000	.000	.000	.000	.000
.000	.000	.000	.000	.000					

\* Distribution by Vehicle  
\* County:Philadelphia  
\* Filename: philage.d

004

1 7 3 90 90 05.639 00.000  
1 7 3 91 97 04.598 00.000  
1 7 3 98 03 03.679 00.000  
1 7 3 04 20 01.840 00.000  
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.  
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00  
98 75 20 2221 11 096. 22212222  
98 75 20 2221 11 096.  
98 81 20 2221 11 096.  
4 2 47.6 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.814.064.045.009.035.006.016.011  
4 2 52.9 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.837.053.037.007.036.005.013.012
4 2 35.2 90.8 20.6 27.3 20.6 7
99 1 1
[A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.851.046.032.006.037.004.012.012
4 2 47.5 94.2 20.6 27.3 20.6 7
99 1 1
[A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.829.057.040.008.036.005.014.011
4 2 63.5 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.738.101.071.014.032.009.025.010
4 2 58.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F12T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.896.025.017.003.039.002.006.012

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4 2 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files**  
**2005 Control Strategy Scenario**

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**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Buck County, Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: buckage.d

```

001
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 5 55.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 5 55.4 84.8 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.857.043.030.006.037.004.011.012

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy

4 5 53.5 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 .  
.888.028.020.004.038.003.007.012  
4 5 55.4 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.844.050.035.007.036.004.012.012  
4 5 58.8 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.860.042.029.006.037.004.010.012  
4 5 47.7 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.872.036.025.005.038.003.009.012

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4 5 10.9 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.916.015.010.002.039.001.004.013

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Bucks County, 2005 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.037 .059 .048 .075 .104 .100 .081 .093 .073 .056
.032 .023 .023 .024 .039 .037 .023 .014 .013 .011
.011 .007 .006 .003 .007
.024 .036 .036 .062 .086 .088 .075 .083 .068 .050
.030 .029 .028 .035 .045 .036 .027 .020 .023 .023
.027 .019 .012 .013 .024
.039 .073 .076 .084 .090 .098 .098 .092 .077 .064
.039 .029 .023 .021 .024 .018 .013 .008 .004 .004
.004 .004 .003 .003 .012
.033 .052 .056 .064 .086 .094 .092 .104 .074 .060
.044 .031 .028 .026 .041 .032 .024 .014 .008 .009
.006 .007 .005 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.037 .051 .041 .047 .047 .038 .050 .078 .070 .045
.064 .432 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Bucks  
\* Filename: buckage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 5 55.6 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.859.042.030.006.037.004.010.012
4 5 55.4 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

```

99 1 1
[A 91F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.857.043.030.006.037.004.011.012
4 5 53.5 90.8 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.888.028.020.004.038.003.007.012
4 5 55.4 94.2 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.844.050.035.007.036.004.012.012
4 5 58.8 80.0 20.6 27.3 20.6 7
99 1 1
[A 91F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.860.042.029.006.037.004.010.012
4 5 47.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 91F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.872.036.025.005.038.003.009.012

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4 5 10.9 80.0 20.6 27.3 20.6 7
99 1 1
[A 93F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.916.015.010.002.039.001.004.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Chester County, Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag

.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

```

001
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 5 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 5 65.0 84.8 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.794.074.052.010.034.007.018.011

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge



```

4 5 64.8 90.8 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.824.059.041.008.036.005.015.012
4 5 64.9 94.2 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.811.066.046.009.035.006.016.011
4 5 65.0 80.0 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.733.104.073.014.031.009.026.010
4 5 52.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.844.050.035.007.036.004.012.012

```

[illegible]

```

4 5 11.0 80.0 20.6 27.3 20.6 7
99 1 1
[A 153F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.902.021.015.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]  
Chester County, 2005 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdflg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfnt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.044 .059 .057 .080 .106 .107 .084 .095 .069 .050
.030 .024 .021 .022 .037 .031 .021 .012 .009 .009
.010 .008 .005 .003 .007
.024 .039 .044 .062 .086 .087 .081 .083 .065 .044
.035 .031 .032 .032 .045 .034 .029 .017 .021 .021
.025 .017 .013 .013 .020
.051 .082 .085 .092 .095 .103 .099 .091 .070 .058
.034 .025 .020 .018 .018 .013 .009 .006 .004 .003
.004 .003 .003 .003 .011
.038 .062 .063 .068 .087 .100 .095 .103 .068 .058
.040 .027 .026 .024 .037 .030 .021 .011 .007 .007
.005 .006 .004 .004 .009
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.030 .044 .040 .043 .042 .043 .043 .070 .068 .061
.065 .451 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Chester  
\* Filename: chesage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 5 64.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.790.076.053.010.034.007.019.011
4 5 65.0 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

```

99 1 1
[A 151F 1T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.794.074.052.010.034.007.018.011
4 5 64.8 90.8 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.824.059.041.008.036.005.015.012
4 5 64.9 94.2 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.811.066.046.009.035.006.016.011
4 5 65.0 80.0 20.6 27.3 20.6 7
99 1 1
[A 151F 1T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.733.104.073.014.031.009.026.010
4 5 52.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 151F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.844.050.035.007.036.004.012.012

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4 5 11.0 80.0 20.6 27.3 20.6 7
99 1 1
[A 153F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.902.021.015.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]  
Delaware County, 2005 Control Strategy w/o Gas Cap Pressure Check

```

1 tamflg
1 spdfllg
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.053 .076 .068 .092 .106 .093 .073 .089 .063 .052
.033 .024 .018 .021 .039 .027 .018 .011 .008 .008
.011 .005 .003 .003 .006
.026 .042 .043 .061 .084 .094 .078 .081 .069 .048
.032 .028 .027 .036 .047 .035 .026 .017 .023 .021
.024 .014 .012 .011 .018
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.034 .056 .043 .035 .045 .042 .054 .078 .066 .052
.067 .428 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Delaware  
\* Filename: delaaage.d

```

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 5 54.4 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.849.047.033.006.037.004.012.012
4 5 54.1 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.847.048.033.007.037.004.012.012
4 5 51.6 90.8 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.883.031.022.004.038.003.007.012
4 5 54.1 94.2 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.832.055.039.007.036.005.014.012
4 5 58.4 80.0 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.852.046.032.006.037.004.011.012
4 5 43.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.926.010.007.001.040.001.002.013

```

```

4 5 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 233F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

**Delaware County, 2005 Control Strategy w/ Gas Cap Pressure Check**

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfld
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.053 .076 .068 .092 .106 .093 .073 .089 .063 .052
.033 .024 .018 .021 .039 .027 .018 .011 .008 .008
.011 .005 .003 .003 .006
.026 .042 .043 .061 .084 .094 .078 .081 .069 .048
.032 .028 .027 .036 .047 .035 .026 .017 .023 .021
.024 .014 .012 .011 .018
.065 .093 .084 .083 .087 .087 .089 .084 .071 .060
.038 .027 .023 .021 .023 .017 .012 .008 .004 .004
.004 .003 .002 .002 .008
.043 .061 .069 .068 .083 .087 .091 .103 .068 .060
.040 .030 .027 .024 .040 .029 .022 .014 .008 .008
.007 .005 .004 .003 .007
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.034 .056 .043 .035 .045 .042 .054 .078 .066 .052
.067 .428 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Delaware  
\* Filename: delaage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 5 54.4 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.849.047.033.006.037.004.012.012
4 5 54.1 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 231F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.847.048.033.007.037.004.012.012
4 5 51.6 90.8 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.883.031.022.004.038.003.007.012
4 5 54.1 94.2 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.832.055.039.007.036.005.014.012
4 5 58.4 80.0 20.6 27.3 20.6 7
99 1 1
[A 231F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.852.046.032.006.037.004.011.012
4 5 43.9 87.7 20.6 27.3 20.6 7
99 1 1
[A 231F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.926.010.007.001.040.001.002.013

```

```

4 5 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 233F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]

Montgomery County, 2005 Control Strategy w/o Gas Cap Pressure Check

1 tamflg  
1 spdfld  
2 vmflag  
3 mymrfg  
2 newflg  
32 imflag  
1 alhflg  
8 atpflg  
5 rlflag  
1 locflg -- Must be 1  
1 temflg  
3 outfnt -- Must be 3; Overridden by PPAQ1  
4 prtflg  
1 idlflg  
3 nmhflg  
3 hcflag

.052	.087	.086	.093	.095	.095	.097	.088	.071	.058
.035	.025	.020	.018	.020	.015	.010	.006	.004	.003
.004	.003	.002	.003	.010					
.041	.059	.059	.071	.089	.090	.091	.101	.072	.059
.041	.030	.026	.024	.038	.030	.022	.014	.008	.008
.006	.006	.004	.004	.008					
.046	.058	.064	.085	.115	.097	.080	.095	.072	.050
.032	.024	.021	.023	.038	.029	.020	.010	.009	.008
.009	.006	.004	.003	.004					
.025	.038	.049	.066	.089	.098	.087	.089	.064	.053
.031	.030	.029	.034	.041	.029	.026	.015	.019	.018
.020	.015	.010	.009	.017					
.052	.087	.086	.093	.095	.095	.097	.088	.071	.058
.035	.025	.020	.018	.020	.015	.010	.006	.004	.003
.004	.003	.002	.003	.010					
.041	.059	.059	.071	.089	.090	.091	.101	.072	.059
.041	.030	.026	.024	.038	.030	.022	.014	.008	.008
.006	.006	.004	.004	.008					
.034	.067	.067	.067	.067	.073	.061	.040	.041	.051
.053	.066	.055	.057	.045	.019	.023	.028	.024	.016
.011	.009	.007	.005	.016					
.039	.050	.038	.040	.042	.036	.050	.075	.074	.052
.067	.437	.000	.000	.000	.000	.000	.000	.000	.000
.000	.000	.000	.000	.000					

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

004

1 7 3 90 90 05.639 00.000  
1 7 3 91 97 04.598 00.000  
1 7 3 98 03 03.679 00.000  
1 7 3 04 20 01.840 00.000  
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.  
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00  
98 75 20 2221 11 096. 22212222  
98 81 20 2221 11 096.  
98 81 20 2221 11 096.  
4 5 54.0 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.866.039.027.005.037.004.010.012  
4 5 53.7 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge



Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy

99 1 1  
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.865.039.028.005.037.004.010.012  
4 5 51.1 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.891.026.019.004.038.003.006.013  
4 5 53.6 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.853.045.032.006.037.004.011.012  
4 5 58.3 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.867.038.027.005.037.004.010.012  
4 5 47.0 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.887.029.020.004.038.003.007.012

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4 5 11.6 80.0 20.6 27.3 20.6 7

99 1 1  
[A 463F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.873.036.025.005.037.003.009.012

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

Montgomery County, 2005 Control Strategy w/ Gas Cap Pressure Check

```

1 tamflg
1 spdfld
2 vmflag
3 mymrfg
2 newflg
32 imflag
1 alhflg
8 atpflg
5 rlflag
1 locflg -- Must be 1
1 temflg
3 outfmt -- Must be 3; Overridden by PPAQ1
4 prtflg
1 idlflg
3 nmhflg
3 hcflag
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.046 .058 .064 .085 .115 .097 .080 .095 .072 .050
.032 .024 .021 .023 .038 .029 .020 .010 .009 .008
.009 .006 .004 .003 .004
.025 .038 .049 .066 .089 .098 .087 .089 .064 .053
.031 .030 .029 .034 .041 .029 .026 .015 .019 .018
.020 .015 .010 .009 .017
.052 .087 .086 .093 .095 .095 .097 .088 .071 .058
.035 .025 .020 .018 .020 .015 .010 .006 .004 .003
.004 .003 .002 .003 .010
.041 .059 .059 .071 .089 .090 .091 .101 .072 .059
.041 .030 .026 .024 .038 .030 .022 .014 .008 .008
.006 .006 .004 .004 .008
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .050 .038 .040 .042 .036 .050 .075 .074 .052
.067 .437 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

```

\* Distribution by Vehicle  
\* County:Montgomery  
\* Filename: montage.d

004

```

1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 75 20 2221 11 096.
98 81 20 2221 11 096.
4 5 54.0 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.866.039.027.005.037.004.010.012
4 5 53.7 84.8 20.6 27.3 20.6 7

```

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 461F 2T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.865.039.028.005.037.004.010.012
4 5 51.1 90.8 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.891.026.019.004.038.003.006.013
4 5 53.6 94.2 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.853.045.032.006.037.004.011.012
4 5 58.3 80.0 20.6 27.3 20.6 7
99 1 1
[A 461F 2T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.867.038.027.005.037.004.010.012
4 5 47.0 87.7 20.6 27.3 20.6 7
99 1 1
[A 461F 6T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.887.029.020.004.038.003.007.012

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4 5 11.6 80.0 20.6 27.3 20.6 7
99 1 1
[A 463F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.873.036.025.005.037.003.009.012

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**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

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5      PROMPT [LITE1 VERSION 3.20 ] [M5INPUT ]
Philadelphia County, 2005 Control Strategy w/o Gas Cap Pressure Check
1      tamflg
1      spdflg
2      vmflag
3      mymrfg
2      newflg
32     imflag
1      alhflg
8      atpflg
5      rlflag
1      locflg -- Must be 1
1      temflg
3      outfmt -- Must be 3; Overridden by PPAQ1
4      prtflg
1      idlflg
3      nmhflg
3      hcflag

.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.027 .059 .052 .076 .076 .082 .081 .092 .069 .052
.037 .035 .032 .031 .046 .044 .024 .015 .012 .017
.014 .009 .005 .003 .007
.016 .036 .033 .041 .065 .074 .096 .076 .072 .048
.044 .042 .034 .038 .052 .026 .022 .025 .042 .029
.024 .016 .015 .020 .010
.037 .054 .056 .064 .070 .080 .085 .088 .081 .077
.053 .042 .038 .035 .038 .031 .023 .014 .007 .006
.005 .004 .003 .003 .006
.024 .039 .043 .051 .062 .070 .076 .092 .072 .066
.052 .040 .036 .039 .058 .046 .035 .023 .016 .015
.011 .008 .006 .007 .011
.034 .067 .067 .067 .067 .073 .061 .040 .041 .051
.053 .066 .055 .057 .045 .019 .023 .028 .024 .016
.011 .009 .007 .005 .016
.039 .051 .032 .039 .040 .042 .066 .076 .081 .055
.062 .417 .000 .000 .000 .000 .000 .000 .000 .000
.000 .000 .000 .000 .000

004
1 7 3 90 90 05.639 00.000
1 7 3 91 97 04.598 00.000
1 7 3 98 03 03.679 00.000
1 7 3 04 20 01.840 00.000
84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.
84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00
98 75 20 2221 11 096. 22212222
98 81 20 2221 11 096.
98 81 20 2221 11 096.
4 5 46.7 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.814.064.045.009.035.006.016.011
4 5 52.2 84.8 20.6 27.3 20.6 7

```

\* Distribution by Vehicle  
\* County:Philadelphia  
\* Filename: philage.d

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

```

99 1 1
[A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1
.837.053.037.007.036.005.013.012
4 5 34.0 90.8 20.6 27.3 20.6 7
99 1 1
[A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1
.851.046.032.006.037.004.012.012
4 5 46.6 94.2 20.6 27.3 20.6 7
99 1 1
[A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1
.829.057.040.008.036.005.014.011
4 5 63.4 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.738.101.071.014.032.009.025.010
4 5 58.5 87.7 20.6 27.3 20.6 7
99 1 1
[A 673F12T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1
.896.025.017.003.039.002.006.012

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4 5 11.2 80.0 20.6 27.3 20.6 7
99 1 1
[A 673F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1
.903.021.014.003.039.002.005.013

```

**Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy**

5 PROMPT [LITE1 VERSION 3.20 ] [M5INPUTB]

Philadelphia County, 2005 Control Strategy w/ Gas Cap Pressure Check

1 tamflg

1 spdflg

2 vmflag

3 mymrfg

2 newflg

32 imflag

1 alhflg

8 atpflg

5 rlflag

1 locflg -- Must be 1

1 temflg

3 outfmt -- Must be 3; Overridden by PPAQ1

4 prtflg

1 idlflg

3 nmhflg

3 hcflag

.037	.054	.056	.064	.070	.080	.085	.088	.081	.077
.053	.042	.038	.035	.038	.031	.023	.014	.007	.006
.005	.004	.003	.003	.006					
.024	.039	.043	.051	.062	.070	.076	.092	.072	.066
.052	.040	.036	.039	.058	.046	.035	.023	.016	.015
.011	.008	.006	.007	.011					
.027	.059	.052	.076	.076	.082	.081	.092	.069	.052
.037	.035	.032	.031	.046	.044	.024	.015	.012	.017
.014	.009	.005	.003	.007					
.016	.036	.033	.041	.065	.074	.096	.076	.072	.048
.044	.042	.034	.038	.052	.026	.022	.025	.042	.029
.024	.016	.015	.020	.010					
.037	.054	.056	.064	.070	.080	.085	.088	.081	.077
.053	.042	.038	.035	.038	.031	.023	.014	.007	.006
.005	.004	.003	.003	.006					
.024	.039	.043	.051	.062	.070	.076	.092	.072	.066
.052	.040	.036	.039	.058	.046	.035	.023	.016	.015
.011	.008	.006	.007	.011					
.034	.067	.067	.067	.067	.073	.061	.040	.041	.051
.053	.066	.055	.057	.045	.019	.023	.028	.024	.016
.011	.009	.007	.005	.016					
.039	.051	.032	.039	.040	.042	.066	.076	.081	.055
.062	.417	.000	.000	.000	.000	.000	.000	.000	.000
.000	.000	.000	.000	.000					

\* Distribution by Vehicle  
\* County:Philadelphia  
\* Filename: philage.d

004

1 7 3 90 90 05.639 00.000

1 7 3 91 97 04.598 00.000

1 7 3 98 03 03.679 00.000

1 7 3 04 20 01.840 00.000

84 20 75 80 3 3 096 1 1 2221 1211 220. 1.20 999.

84 20 81 20 3 3 096 1 1 2221 3211 50.0 15.0 1.00

98 75 20 2221 11 096. 22212222

98 75 20 2221 11 096.

98 81 20 2221 11 096.

4 5 46.7 87.7 20.6 27.3 20.6 7

99 1 1

[A 673F11T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1

.814.064.045.009.035.006.016.011

4 5 52.2 84.8 20.6 27.3 20.6 7

Existing I/M Record  
ASM Final Cutpoints  
ATP Program  
Pressure  
Purge

Philadelphia 5-County Area MOBILE Input Files  
2005 Control Strategy

99 1 1  
[A 673F11T 1 ] C 79.8 87.3 8.7 8.7 20 1 1 2 1  
.837.053.037.007.036.005.013.012  
4 5 34.0 90.8 20.6 27.3 20.6 7  
99 1 1  
[A 673F11T 2 ] C 87.3 92.5 8.7 8.7 20 1 1 2 1  
.851.046.032.006.037.004.012.012  
4 5 46.6 94.2 20.6 27.3 20.6 7  
99 1 1  
[A 673F11T 3 ] C 90.5 96.0 8.7 8.7 20 1 1 2 1  
.829.057.040.008.036.005.014.011  
4 5 63.4 80.0 20.6 27.3 20.6 7  
99 1 1  
[A 673F11T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.738.101.071.014.032.009.025.010  
4 5 58.5 87.7 20.6 27.3 20.6 7  
99 1 1  
[A 673F12T 24HR] C 71.0 96.0 8.7 8.7 20 1 1 2 1  
.896.025.017.003.039.002.006.012

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4 5 11.2 80.0 20.6 27.3 20.6 7

99 1 1

[A 673F19T 4 ] C 71.0 84.5 8.7 8.7 20 1 1 2 1  
.903.021.014.003.039.002.005.013